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ARTICLES

BOOK REVIEWS

The International Journal of Accounting

A Review and Synthesis of Research on Supplier Concentration, Quality and Fee Structure in Non-U.S. Markets for Auditor Services

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University of Wyoming and the University of Toledo

Key Words: audit fees, auditor concentration, auditor quality

Abstract: *This paper reviews and summarizes extant research into auditor concentration, audit quality, and the determinants of audit fees in audit markets outside the United States. Similarities and differences between studies, including methodologies and findings, are discussed. The review identifies some structural differences in audit markets between studies that are traceable to divergences in economic, cultural and social norms across developed and developing nations. The paper concludes with the identification of areas where future research may be most helpful in identifying other differences and similarities in international markets for audit services.*

The purpose of this paper is to review and synthesize the research on audit market concentration, auditor quality and the determinants of audit fees in countries outside the United States. Yardley et al. provide a comprehensive survey of empirical results of these three factors in the market for audit services in the United States (Yardley, Kaufman, Cairney and Albrecht, 1992). Understanding of international similarities and differences in the audit services market is important because of the increasingly global nature of business and the worldwide scope of the services and quality standards advertised by large international accounting firms.

Mautz and Sharaf (1961) observed that significant concentration was taking place in the American auditing profession in the late 1950s and early 1960s and predicted that this trend, if it continued, would result in a few very large firms and many very small firms with little in between. Gilling and Stanton (1978) noted that Mautz and Sharaf's (1961) prediction applied internationally, in that audits of large public companies were dominated by a few very large international public accounting firms. The mergers between large public accounting firms in the late 1980s reduced the "Big Eight" to the "Big Six," resulting in increased concentration of auditing services around

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the world.[1] This continuing trend toward a few large suppliers of auditing services has received increased notice by the international business community and has raised concerns among regulatory agencies worldwide of the impact of mergers on competition, audit fees, auditor independence and audit quality.

Determining an audit fee that is mutually acceptable to auditors and clients is a common problem. The profession deserves fair compensation for services rendered; at the same time, clients should be assured there is value for services received. Regulators are charged with protecting the interests of the investing public, in which the independent audit plays a prominent role. Monitoring the concentration of audit services, assessing audit quality, and developing models for fee determination are useful to each of these groups for understanding the basis and rationale for audit fees.

The research investigating audit market concentration, quality and determinants of audit fees outside the United States is, with a few exceptions, from markets in primarily English-speaking industrialized nations. There are three major conclusions to be drawn from these studies. First, non-U.S. audit markets are becoming increasingly dominated by the large international firms and their affiliates. Second, studies of audit quality are limited and report conflicting findings as to whether large audit firms provide a higher-quality product. Finally, there is evidence that these firms receive a fee premium for their services in most countries, consistent with a theory of quality-differentiated services. However, environmental factors in countries such as New Zealand, Malaysia, and Korea affect the competition for, and pricing of, audit services.

CONCENTRATION IN THE MARKET FOR AUDIT SERVICES

Questions as to the level of market concentration and industry profitability (a possible consequence of lack of competition) have been extensively researched in the economics literature (e.g., Bain 1951; Meehan and Duchesneau 1973; White 1976; Geithman, Marvel and Weiss, 1981; Bothwell, Cooley and Hall, 1984; and Shepherd, 1990). Two commonly-used measures for market concentration are the n-firm concentration ratio (CR_n) and the Herfindahl index (H). CR_n expresses concentration as the percentage of total activity in a market that is accounted for by the n most active firms. The concentration ratio based on audit fees of the n largest firms is calculated as follows:

$$CR_n = \frac{\text{Total Audit Fees of } n \text{ Largest Firms}}{\text{Total Audit Fees of All Firms}} \tag{1}$$

The Herfindahl index is calculated as follows:

$$H = \sum_{i=1}^{n} (S_i)^2 \;/\; (\sum_{i=1}^{n} s_i)^2 \tag{2}$$

where S_i refers to sales of the ith firm.[2] H is a market-wide concentration measure that is sensitive to the number of firms active in the industry as well as to the variance in activity levels across firms.[3] Studies of audit markets in Australia (Gilling and Stanton, 1978), the United Kingdom (Mozier and Turley, 1989; Iyer 1993), New Zealand (Johnson, Walker and Westergaard, 1995), and Denmark (Christiansen and Loft, 1992) have used one or both of these measures to measure market concentration. The concentration ratios reported in these studies are shown in Table 1.

Table 1. Concentration Measures Reported in Studies of Non-U.S. Audit Markets

		Concentration Measures			
Year	*Country*	CR_4	$CR_{8/9}$	*H*	*Study*
1971	Australia	50%	77%	0.09	Gilling and Stanton (1978)[2]
1976	Australia	51%	79%	0.09	Gilling and Stanton (1978)[2]
1972	UK	47%	54%[1]	0.07	Mozier and Turley (1989)[3]
1982	UK	69%	82%[1]	0.09	Mozier and Turley (1989)[3]
1983	Denmark	54%	71%	0.09	Christiansen and Loft (1992)[4]
1989	Denmark	54%	73%	0.10	Christiansen and Loft (1992)[4]
1990	Denmark	71%	80%	0.18	Christiansen and Loft (1992)[4]
1988	UK	46%	—	0.71	Iyer and Iyer (1993)[3]
1990	UK	60%	—	0.79	Iyer and Iyer (1993)[3]
1989	New Zealand	89%	—	—	Johnson et al. (1995)[3]

Notes: 1. CR_9
2. Concentration measures based on client assets
3. Concentration measures based on audit fees
4. Concentration measures based on client revenues

Australia

Gilling and Stanton (1978) studied the structure of the audit market in Australia between 1971 and 1976. Their study identified and classified the auditing firms active in Australia during that period. Samples were drawn from (1) the 150 largest public companies in Australia, (2) all public companies listed on the Sydney Stock Exchange in December 1976, and (3) unlisted companies with an authorized capital of more than A$2 million. Gilling and Stanton collected information on total assets, shareholders' funds and net profits for the firms in the sample then rearranged the information according to auditor. Concentration ratios, based on clients' assets, were reported for the leading four (CR_4) and eight (CR_8) auditing firms. The results of their investigation showed increasing concentration and dominance by a few firms. During and immediately following the period covered by Gilling and Stanton's study, several large and small to medium Australian accounting forms announced their plans to merge with the Big Eight audit firms. The effects of these mergers were not reflected in their reported statistics.

United Kingdom

Mozier and Turley (1989) examined changes in the structure of the UK market for audit services provided to the industrial and commercial companies comprising the *Financial Times* Actuaries 500 Share Index (*FT*500). They calculated concentration ratios at two points in time (1972 and 1982) using audit fees as the measurement base and then investigated some possible explanations for changes in concentration. This study used audit fees as the measurement base because fee data represent audit firm revenues and is thus arguably the most appropriate measurement base. The 1967 Companies Act requires audit fees to be disclosed in all company accounts and this information is therefore available to the public.

Mozier and Turley documented an increase in concentration within the *FT*500 audit services market for the period 1972-82. They also noted a decline in the number of

audit suppliers from 144 to 85 firms. The three primary reasons for these events were: (1) mergers between firms; (2) the replacement of one audit firm by another, usually larger, firm; and (3) a decline in the number of joint audits, usually leaving the larger firm as the sole auditor. In addition, the study reported a substantial increase in audit fees but could not determine if this change resulted from a monopolistic market structure or developments in audit standards.

Iyer and Iyer (1993) conducted a study of the effects on audit fees of mergers between Big Eight firms in the UK. Iyer and Iyer calculated concentration ratios based on the fees of the twenty leading audit firms in the UK for periods before and after the mergers. These measures, shown in Table 1, indicate an increase in concentration. However, the reported ratios are upwardly biased because they are based only on fee data from the twenty leading audit firms, not on the fees of all firms in the UK audit market (Mozier and Turley, 1989).

New Zealand

Johnson et al. (1995) examined the level of concentration in the New Zealand audit market during 1989. Four- and five-firm concentration ratios based on audit fees were calculated from a random sample of 259 listed New Zealand companies.[4] The sample was analyzed according to: (1) whether the companies were traded on the New Zealand Stock Exchange; and (2) company size (based on a median split of total assets of sample companies). Four-firm ratios were calculated for consistency with prior studies and the five-firm ratio was calculated because there are five dominant firms in the New Zealand audit market.[5] The CR_4 of 89% and the CR_5 of 96% reported by Johnson et al. are among the highest concentration levels for audit services yet reported.

Denmark

Christiansen and Loft (1992) calculated concentration ratios and Herfindahl indices for firms in the Danish audit market for the years 1983, 1989 and 1990. 1983 was used as a baseline measure for comparison, and the latter two years capture audit market concentration immediately prior to and following the effects of the merger of several large international audit firms, respectively.

Their sample consisted of the companies traded on the Copenhagen Stock Exchange. Since Danish audit fees are confidential, Christiansen and Loft (1992) estimated concentration ratios and H using net sales. As shown in Table 1, little change if any of these measures occurred between 1983 and 1989, the year immediately prior to the mergers. In 1990, following the mergers, significant increases were noted in all measures of large audit firm market share. These increases indicate that trends in supplier concentration in the Danish audit market parallel those observed in other audit markets worldwide.

Other Measures of Auditor Concentration

Several studies of audit supply in the Australian, UK and New Zealand markets (Gilling and Stanton, 1978; Briston, 1984; Briston and Kedslie, 1984; 1985; Gilling, 1985)

Table 2. Concentration Measured by Number of Clients in Australia, U.K. and New Zealand

	New Zealand 1976	*Australia 1976*	*UK 1978*	*New Zealand 1983*	*UK 1983*
Top 4 firms	49%	41%	—	58%	—
Top 5 firms	56%	—	37%	64%	44%
Top 8 firms	70%	67%	—	81%	—
Top 10 firms	—	—	51%	—	63%

Source: Adapted from D. Gilling, "Audit Concentration in New Zealand." *The Accountants' Journal* (May 1985), 23-26.

have used other measures of concentration such as number of large and small audit firms, number of clients, number of audits and percentages of client assets and profits. Table 2, adapted from Gilling (1985), summarizes concentration measured by number of clients for these three countries. Increases in other measures of audit concentration reported by these studies further illustrate the growth and dominance of the large auditing firms in these markets during recent years.

Summary of Research on Measures of Auditor Concentration

The major contribution of the non-U.S. studies of auditor concentration is that they have identified significant increases in concentration consistent with the U.S. market[6] and have focused attention on the issue. Some studies have used broad samples of companies in assessing concentration (Gilling and Stanton, 1978; Johnson, Walker and Westergaard, 1995), while others have focused on large companies and differences across client industries (Mozier and Turley, 1989). However, the largest companies in most economies are diversified and thus difficult to classify.

All of these studies provide evidence of increasing concentration of audit services in their respective countries. A recent model of industrial organization suggests that a four-firm concentration ratio above 60 percent indicates a "tight oligopoly," in which collusive supplier behavior can be accomplished with relative ease.[7] This threshold has been reached in the UK, New Zealand and Denmark based on the recent audit fee research in these markets. The results from Australia are somewhat dated; however, it is reasonable to assume that the Australian audit market has experienced the same increase in supplier concentration during the intervening period due to audit firm mergers and the other factors discussed above.

One study has tested the hypothesis of increased audit fees due to increased concentration in the UK audit market (Mozier and Turley, 1989). This study indicates that the top nine firms charged significantly higher fees than other firms from 1972 to 1982, adjusted for inflation and client size. However, there is only speculation as to why UK audit fees increased, and this speculation centers on increased audit time budgets due to developments in auditing standards in the UK.

STUDIES OF AUDIT QUALITY

Numerous studies of auditor/client market behavior in the U.S. have attempted to capture the perceived quality of audit services. Much of this research has focused on

whether audit firm size (e.g., Big Six versus non-Big Six) is an adequate surrogate for audit service quality, with larger firms presumably providing higher-quality audits (Francis and Wilson, 1988; DeFond, 1992). Specific factors used to measure and/or explain auditor quality differentiation have included industry expertise (Danos and Eichenseher, 1986); frequency of litigation (Palmrose, 1988); auditor switching (Smith and Nichols, 1982) and pricing of new offerings of capital stock (Beatty, 1989). While some evidence exists that larger firms in the U.S. are more successful in audit-related lawsuits, and are associated with higher offering prices for new stock sales, such evidence is not conclusive and may be related to such ancillary factors as the increased ability to provide consulting and other non-audit services or the perceived "deep pockets" of larger firms in the event of litigation (Yardley et al., 1992).

Studies of possible antecedents of audit quality in non-U.S. markets are limited and have focused on different dimensions of perceived auditor quality. Recent research into auditor quality from the Korean and Canadian audit markets are discussed in turn.

Korea

Park (1990) examined the effects of competition among auditing firms in the Korean market on management's ability to influence auditors. Park's study followed a 1980 law repealing extensive government control over the auditing profession and introducing competition. Korean government planners believed that the development of large auditing firms with international affiliations provided an opportunity to improve and maintain audit quality in the face of competition. Prior to 1980, audit clients were assigned to audit firms in a general ratio to firm size.

The sample for this study was all companies whose stock was traded continuously during 1978-84 on the Korea Stock Exchange. Park analyzed audit opinions for two periods, 1978-80 (before audit competition) and 1982-84 (after competition). Data were analyzed to determine: (1) whether competition affected auditor change behavior; (2) the association between the audit opinion and auditor changes; (3) the impact of changes on subsequent opinions; and (4) the relationship between auditor changes and management and audit firm characteristics.

Park's results showed that auditor changes were more prevalent before competition than after, reportedly because management had little incentive to retain the same auditor from year to year under the government controlled program. There was a significant relationship between type of opinion and auditor changes after, but not before, competition was introduced. Auditor changes and second year opinions were not significantly related before competition but the relationship was significant after competition. Finally, the three largest audit firms, all affiliated with the Big Eight, issued a significantly higher proportion of clean opinions than did medium-sized audit firms.

Park's findings provide evidence of management behavior to influence auditors when competition is introduced. In addition, the results were contrary to the belief that quality could be improved by the development of larger audit firms with larger client bases and a greater ability to resist client pressure. However, the finding of more clean opinions issued by large audit firms is not necessarily attributable to lower-quality audits (one possible explanation for the increase in unqualified opinions after the advent of competition). Park conjectured that the larger audit firms had larger clients who were more likely to have better internal control systems and were thus more likely to receive

clean opinions. However, Park's data indicated that larger companies did not receive a greater proportion of clean opinions than did other companies.

Canada

Davidson and Neu (1993) proposed that a comparison of management earnings forecasts with audited earnings reports provides an approach to measuring audit quality. They hypothesized that managers have incentives to minimize the difference between forecasted and reported income. If large audit firms provide higher-quality audits than do smaller firms, then large firms should be associated with larger forecast errors. To test this hypothesis, Davidson and Neu examined 112 Canadian companies applying for listing on the Toronto Stock Exchange between 1983 and 1987. Regulations required each company to include earnings forecasts in its prospectus filed with the Ontario Securities Commission. For each of these companies, the earnings forecast was compared to the subsequent audited earnings report. The data were divided into companies audited by the Big Eight and those audited by other audit firms.

The results of this study indicated that the forecast errors for companies audited by the Big Eight were significantly higher than for those audited by other audit firms at $p \leq .05$, consistent with Davidson and Neu's hypothesis that large audit firms provide higher-quality audits.

Summary of Studies of Audit Quality

Park's (1990) study is important because competition for audit services is relatively new to Korea and his results highlight ways in which the quality and independence of audit judgments may be affected. The reputation and influence of the largest international audit firms may be sufficient to cause management to accept auditor-proposed adjustments and disclosures, resulting in a higher incidence of unqualified audit opinions for clients of these firms. Alternatively, Korean affiliates of the Big Six face local competition that is not burdened by the overhead costs associated with international firms. As a result, Big Six affiliates may encounter greater pressure than local firms to secure and retain clients.

Davidson and Neu (1993) provide preliminary evidence of a positive association between audit firm size and audit quality. The principal assumption of this study was that management forecasts tend to be truthful and, therefore, auditor quality will have no impact on the forecast. If this basic assumption is correct, then the results of this study may justify fee premiums collected by the Big Six firms.

DETERMINANTS OF AUDIT FEES

Simunic (1980) investigated the level of competition in the U.S. audit market of publicly-held companies using a multiple regression model of ten independent variables classified into three audit cost categories (loss exposure, loss sharing and auditor production function) and a dichotomous variable for firm type (Big Eight versus non-Big Eight). Audit fees were used as the dependent variable. Simunic found that the market for audits was competitive in the U.S., with economies of scale for large audit firms

Table 3. Selected Variables Used in Audit Fee Models of Non-U.S. Markets

Author	*Country*	*Assets*	*InvRec*	*Cmplx*	*Tenure*	*Loss*	*Qual*	*Big*
Taylor and Baker (1981)	UK	s	—	s	—	—	—	—
Francis (1984)	Australia	s	—	s	ns	ns	ns	s
Firth (1985)	New Zealand	s	s	ns	—	ns	—	ns
Francis & Stokes (1986)	Australia	s	s	s	—	ns	s	s
Simon et al. (1986)	India	s	s	s	—	ns	ns	s
Low et al. (1990)	Singapore	s	ns	s	—	s	ns	—
Simon et al. (1992)	Hong Kong	s	s	s	—	—	—	s
	Malaysia	s	s	s	—	—	—	ns
	Singapore	s	s	s	—	—	—	ns
Iyer and Iyer (1993)	UK	s	s	s	—	—	—	ns[1]
Anderson and Zéghal (1994)	Canada	s	s	s	—	ns	—	ns[2]
Johnson et al. (1995)	New Zealand	s	s	s	ns	s	ns	s

Notes: s = significant at $p \leq .05$
ns = not significant
— = not tested
1. Represents a dummy variable indicating whether the auditor of the *i*th auditee is a merged firm or a non-merged firm.
2. Full model results not reported; Big 8 effect was not significant as a dummy variable in either the large or small client segment.

Assets: Client total assets or]$\log_e$(total assets)]
Invrec: Inventory and/or accounts receivable as percentage of client total assets (typically more difficult and time-consuming to audit than other accounts)
Cmplx: Number of subsidiary companies consolidated in client's financial statements, foreign sales, or number of industries in which the entity operates (a measure of client complexity)
Tenure: Length of tenure of client's current auditing firm
Loss: Dummy variable indicating a reported loss in prior year
Qual: Dummy variable indicating a qualified audit opinion in prior year
Big: Dummy variable indicating audit firm size (i.e., "Big Eight," "Big Six," etc. versus smaller firms)

(evidenced by lower audit fees than for their smaller competitors). Simunic's study was the first of its kind and led to numerous replications and extensions in audit markets of other countries.

All but one of the studies reviewed in this section have used the basic form of Simunic's model, although some of the independent variables differ across studies. Table 3 presents a summary of the research investigating predictors of audit fees and variables commonly considered in audit fee models in the non-U.S. markets.

Australia

Francis (1984) adapted Simunic's model for use in studying the Australian audit market. Francis used a random sample of 150 companies (thirty industrial firms listed on the Sydney Stock Exchange from each of the years 1974-78). Seventy-one companies employed Big Eight accounting firms and 79 employed non-Big Eight firms, consistent with the fact that the Big Eight audited approximately half of publicly-traded companies in Australia at that time. The sample was partitioned into "small" and "large" auditees to test the joint effects of product differentiation and scale economies.

Two hypotheses were tested: (1) audit firm size had no effect on audit prices in Australia; and (2) there was no significant price cutting on initial audit fees in Australia. The firm size hypothesis was rejected, supporting the existence of product differentiation by the Big Eight in the Australian audit services market. Big Eight firms were associated with higher audit fees for both large and small auditees, consistent with the perception that larger firms provide higher-quality audits. The hypothesis of price cutting to gain clients was not supported; in fact, Francis found limited evidence that initial audit engagements were priced higher than continuing engagements.

Francis and Stokes (1984) conducted a further test of the Australian market to determine if auditee size differences accounted for the conflicting conclusions of Simunic (1980) and Francis (1984). The sample in this study consisted of the 96 smallest and 96 largest publicly-traded non-financial companies (as measured by total assets) for 1983 listed in the Australian Graduate School of Management Annual Report Data Files. The sample was selected in order to obtain unambiguously small and large auditees.

The regression estimates for the sample of small auditees supported the hypothesis that Big Eight audit prices were significantly higher than non-Big Eight prices and suggest the existence of product differentiation with respect to Big Eight firms. The regression results for the large company sample, however, indicated no significant differences in audit prices charged by Big Eight versus non-Big Eight firms, consistent with earlier findings for the U.S. audit market (Simunic, 1980). Francis and Stokes concluded that the structure of the Australian audit market was consistent with product differentiation in services offered by the Big Eight, and diseconomies of scale when non-Big Eight firms audited large clients.

New Zealand

Firth (1985) investigated cross-sectional differences in the audit fees of companies traded on the New Zealand Stock Exchange in 1981 and 1983 using a sample of 96 manufacturing firms and a linear regression model on audit fees patterned after Simunic (1980). Firth considered five factors in selecting independent variables; client size, complexity, risk, ability of the client to bear costs, audit firm size and audit competition.

The main findings of this study were: (1) total assets, accounts receivable/total assets, and unsystematic risk were the most important variables in explaining audit fees in the New Zealand market; and (2) there was no significant large firm effect, i.e., the major audit firms did not charge for their services when the effects of other factors were controlled. The sample companies were split into "large" (total assets $\geq$ NZ$21 million) and "small" ($<$ NZ$21 million) to test for differences in fee structures by the six major firms versus all other auditing firms. Firth's results may have been influenced by the inclusion of only manufacturing companies in his sample, and/or by the selection of NZ$21 million as the cut point for splitting his sample into "large" and "small" companies, which was not explained.

Firth also discussed the environment in which audit fees were set. Of particular importance was the fact that until 1983, auditing firms operating in New Zealand could not use the names of their international affiliates. As a result, "brand recognition," found to be consistently related to higher audit fees (Yardley et al., 1992), may not have been a factor in the New Zealand market at that time and thus contributed to the lack of a Big Eight fee premium, contrary to results from other audit markets.

Johnson et al. (1995) updated and extended Firth's research in the New Zealand market by: (1) using a larger sample size; and (2) developing a more complete regression model to assess the importance of various determinants of audit fees. The sample in this study consisted of 300 companies randomly chosen from those registered with the New Zealand Justice Department in 1989. Five financial institutions were omitted because the audit fee behavior for this type of client has been found to be not representative of the market as a whole (Simunic, 1980). Questionnaires were mailed to the sample companies requesting information not contained in the typical New Zealand corporate annual report, such as whether the auditor made fee reductions for services provided by the company and if the company requested the auditor to provide reports in addition to the audit report. One hundred seventy-nine usable responses were received.

A multiple regression model of the determinants of audit fees was developed which included a set of variables that has significantly affected the level of audit fees in prior studies. The sample was also partitioned into listed and unlisted companies, and further into large and small companies within listing status (based on the median value of assets), to test for large firm fee premiums in these market segments. For the entire sample, the five largest firms charged an average fee premium of 24.1%, comparable to the average large firm premiums of 16-31% reported in other markets (see Simon and Francis, 1988; Simon, Ramanan and Dugar, 1986). The regression results for the large listed and small unlisted client subsamples also indicated large audit firm fee premiums, averaging approximately 12%, in these market segments. However, no large firm fee premiums were noted in the large unlisted and small listed client subsamples, which suggests that large-firm audit services are not quality differentiated in these segments of the New Zealand audit market.

United Kingdom

Taylor and Baker (1981) examined publicly-available accounting information to identify and describe size and complexity factors associated with audit fees in the United Kingdom. This information was intended to assist managers and others interested in

assessing the audit fee charged to individual companies. The size measures included assets, liabilities (and some of their individual components) and sales. Complexity factors considered were the number of subsidiaries and the number of countries in which each company was organized. Data for the study were obtained from annual reports of a random sample of 126 British manufacturing companies listed in Dun and Bradstreet's *Principal International Business* index for 1977 with sales greater than £100 million. The size and complexity variables were regressed on audit fees. The model's R^2 was 0.79 and all of the regression variables were significant at $p \leq .01$.

Iyer and Iyer (1993) examined the effects of the 1989 mergers of four Big Eight firms in the UK (Arthur Young with Ernst & Whinney and Coopers & Lybrand with Deloitte Haskins & Sells) on audit fees. Data from two periods were analyzed: pre-merger (companies with financial years ending 12/1/88 to 8/31/89), and post-merger (companies with financial years ending 12/1/90 to 11/30/91). The sample of companies began with 729 firms with Big Eight auditors and was reduced to 177 usable firms pre-merger and 379 usable firms post-merger after eliminating effects of auditor changes, missing data and financial institutions. One hundred fifty companies with observations available for both periods remained in the final sample.

A regression analysis was performed on the pre- and post-merger data sets to test the fit of Simunic's (1980) model for UK companies and to test for differences in audit fee structure between the periods. Instead of using a dummy variable for Big Eight versus non-Big Eight audit firms as in other studies (since all companies in the sample were audited by the Big Eight), a dummy variable representing "merged" or "non-merged" audit firms was used. A matched- pairs design and regression of first-differences was also employed for the 150 companies in the pre- and post-merger data set to test for the effect of audit firm mergers on audit fees.

The results of the first regression indicated that client size and complexity were significant predictors of audit fee. However, merger status of the audit firm was not significant in either the pre- or post-merger period, implying the mergers had no effect on fees. The results of the matched-pairs model indicated there was no difference in the level of audit fees between the two periods.

Canada

Anderson and Zéghal (1994) tested a comprehensive model of audit fees in the Canadian market for three years: 1980, 1982, and 1984. Their sample consisted of 374 observations from 172 Canadian companies during the three years, split between large (total assets > C$100 million) and small (total assets ≤ C$100 million) clients. Their results indicated a significant positive relationship between audit fees and client size and complexity variables. Anderson and Zéghal also reported a significant relationship between audit fees and client expenditures on internal auditing for the large client segment of their sample. The positive sign of the coefficient for internal audit costs is in contrast with prior research (Simunic, 1980) which has found that increased expenditures on internal auditing activities decrease audit fees. In addition, Anderson and Zéghal reported a positive relationship between auditor size (a continuous variable based on audit firm revenues) and audit fees in the small client segment of their sample, consistent with product differentiation in this market segment. However, in contrast with prior studies that have reported a large firm fee effect, auditor size was not

significant in either client segment model when defined as a dummy variable (1 = Big Eight, 0 = other).

Anderson and Zéghal also compared audit fees across the eight largest Canadian firms in both segments of the market by running eight separate regressions with a dummy variable for each firm.[8] No differences were observed across firms in the large client segment. However, in the small client segment, two of the eight firms (Clarkson Gordon and Peat Marwick) charged significantly higher fees than average, while Touche Ross charged significantly lower fees. This finding is consistent with the observation of product differentiation in the small client segment of the Canadian audit market.

Singapore

Low, Tan and Koh (1990) investigated the determinants of audit fees in Singapore using a variation of earlier regression models. Low et al.'s model included nine independent variables, with data drawn from 291 companies listed on the Singapore Stock Exchange during 1986. After initial problems with model fit stemming from the heterogeneity of industries included in the sample, the regression analysis was performed on each of six major industry groups identified by the Stock Exchange of Singapore (Industrial and Commercial, Properties, Hotels, Finance, Plantations and Mining). Individual R^2s were .77-.99 for all groups except Industrial & Commercial (I&C) at .11. The I&C group represented 171 companies, or 59% of the sample. This group was then divided into five sub-groups (Primary Industries, Construction, Manufacturing, Services and Trading) for further analysis. One sub-group, manufacturing, representing 77 companies (45% of the I&C group), had an R^2 of .20 and was the cause of the poor fit of the overall model for the I&C group.

The major contribution of the Low et al. study was demonstrating how industry-specific models can be used to improve the fit of regression models for audit fees. The models for the industry groups and sub-groups highlighted the significant explanatory variables in each group. In addition, this study was conducted in a newly-industrialized country with a different socioeconomic background from that of most Western developed countries. This allows for the direct comparison of audit markets across different social and cultural, as well as economic, dimensions.

India

Simon et al. (1988) examined the structure of the Indian market for audit services, again applying a regression of explanatory variables on audit fees. Since India's economy was largely developed during the period in which it was a British colony, the structure of the accounting profession and company financial reporting requirements in India are similar to those found in the UK and other Commonwealth nations (e.g., Australia and New Zealand). Seven of the Big Eight accounting firms were represented in India and there was a clear distinction between the size of these firms versus regional and local audit firms.

The audit fee regression model exhibited a good linear fit (R^2 = .83). Audit fees were determined to be a function of size, complexity and risk variables, and the auditor size variable was significant. This indicates that Big Eight firms received higher audit fees in the Indian market than did other firms, apparently as a result of product differentiation.

Hong Kong, Malaysia and Singapore

In a separate study, Simon, Teo, Trompeter (1992) extended prior research into the market for audit services with a comparative study of three Asian countries using a regression model of audit fees across countries that is relatively simpler than those used in most prior research. Simon et al.'s model regressed the $\log_e$ (client total assets), $\log_e$ (number of consolidated subsidiaries) and a Big Six dummy variable on $\log_e$ (audit fees). Data were collected from annual reports for a sample of companies in each country (Hong Kong = 99; Malaysia = 132; Singapore = 126) for 1987. The Big Six audited 68% of the sample for Malaysia, 78% for Hong Kong and 83% for Singapore. All three countries tend to follow the reporting standards of British Commonwealth nations. Thus, audit fee data are publicly available. The large international audit firms are represented in each country, although their presence in Malaysia is less significant than in the other two countries.

For each of the country-specific models, the results suggested a good linear fit, and all of independent variables except the Big Six indicator were significant at the .01 level for each country. There was evidence of a Big Six fee premium in Hong Kong ($p \leq .05$) and Singapore ($p \leq .10$), but not in Malaysia. National regulations on foreign ownership of 30% and a significant number of family-controlled companies in Malaysia were considered as potential explanations for a lower demand for quality-differentiated audits in that country.

SUMMARY OF RESEARCH ON DETERMINANTS OF AUDIT FEES

The non-U.S. studies of audit fee determinants have made significant contributions in several areas to a greater understanding of differences in the worldwide market for audit services. First, they have extended variations of Simunic's (1980) model to a number of countries in varying stages of economic development. The results of these studies have shown remarkable consistency in the variables that predict audit fees. In each study, client size explained the majority of the variation in audit fees charged to clients. In addition, Taylor and Baker (1981) showed that a different form of an audit fee regression model may be useful to managers, internal accountants and others in assessing the elements of audit fees.

Table 4 presents a summary of the studies reporting market characteristics consistent with Simunic's (1980) audit fee regression model. The majority of the studies indicate broad similarities in the audit services markets of foreign countries, e.g., competitive markets and the presence of large firm fee premiums. Most of the countries examined have legal and reporting requirements patterned after the British Commonwealth model, which likely contributes to the consistency of findings across audit markets in different nations.

Countries such as Korea, which are not influenced by the UK corporate reporting model, demonstrate important fundamental differences in the determinants of audit fees. Environmental conditions in these countries have limited the ability of the Big Six to capture high market shares and provide quality differentiated services at premium prices.

Low et al. (1990) demonstrated that the use of industry-specific models yield significant increases in the explanatory power of audit fee models. Industry-specific fee models may be an improvement over previous models based on a variety of industries.

A simplified form of the basic audit fee model did not fit well with manufacturing industries in Singapore (see Simon, Teo and Trompeter, 1992). Singapore is an example

Table 4. Empirical Results of Market Characteristics in Non-U.S. Audit Markets

			Market Characteristics (per Simunic 1980)	
Study, Client Size (based on average assets)	*Country*	*Variable for Firm Type**	*Competitive Market*	*Large Firm Fee Premium (%)*
Francis (1984)				
A$8 million (small)	Australia	S	S	S
A$90 million (large)		S	S	S
Francis and Stokes (1986)				
A$1.8 million (small)	Australia	S	S	S
A$603 million (large)		S	S	N
Simon et al. (1986)				
$80 million	India	S	S	S
Simon et al. (1992)				
HK$7095 million	Hong Kong	S	S	S(31%)
S$795 million	Singapore	S	S	S(26%)
M$571 million	Malaysia	S	S	N
Iyer and Iyer (1993)				
£106.0 million (pre-merger)	UK	N	S	—
£96.9 million (post-merger)		N	S	—
Firth (1985)				
< NZ$21 million (small)	New Zealand	N	S	N
≥ NZ$21 million (large)		N	S	N
Johnson et al. (1995)				
NZ$5.8 million (small)	New Zealand	S	S	S(12%)
NZ$302 million (large)		S	S	S(12%)
Anderson and Zéghal (1994)				
≤ C$100 million (small)	Canada	S	S	S
> C$100 million (large)		N	S	N

Note: * S = effect was significant; N = effect was not significant.

of a newly-industrialized country with a different socioeconomic and cultural profile than those examined in most other audit fee studies. This finding suggests that the investigation of audit fee determinants in other less-developed national economies may yield other potentially important differences in audit fee structure.

The experience in New Zealand reported by Firth (1985) and Johnson et al. (1995) may show the evolution of market dominance by large audit firms outside the U.S. In 1983, there was no evidence of Big Eight fee premiums in New Zealand. However, this situation had changed dramatically by 1989, ostensibly as the result of a change in the law permitting accounting firms to use the names of their international affiliates. Relaxation of competitive barriers and increasing participation of foreign investors in financial markets may over time bring about similar changes in the market for audit services in countries such as Malaysia and Korea.

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

Most studies of audit services, audit quality, and determinants of audit fees outside of the United States have been conducted in industrialized countries that have legal

and financial reporting systems based on the British Commonwealth model. Additional studies in non-UK influenced markets need to be undertaken. However, a comparison of findings in studies of audit markets in Canada, the UK, Australia, New Zealand, India, Singapore, Hong Kong, Korea and Malaysia illustrates some of the different relationships that exist among the various accounting and auditing environments and standards, company management, auditors, users and institutional settings. Moreover, differences in local economic, social and cultural standards are also reflected in the different results of audit market research from these nations. These cross-cultural differences and their interrelationships affect the market for audit services, and the Big Six and other large audit firms are not immune to them. Such differences need to be identified in different economies and areas of the world and studied to determine their influences on audit firm behavior.

The measures of audit market concentration commonly used in these studies are based on number of clients and client characteristics such as total assets and/or total revenues, profitability, and complexity. Although the reported measures suggest a high level of auditor concentration and are consistent across different audit markets, there is no extant theoretical explanation for why they are appropriate. In addition, there has been only one attempt to examine concentration by industry to date (see Mozier and Turley, 1989). Determination of the antecedent conditions for high levels of auditor concentration across national boundaries and differing economic conditions is another fruitful avenue for further research.

The experiences in Korea and Canada provide contrasting results on the issue of audit quality in non-U.S. markets. Data from Canada suggest the Big Six provide higher quality audits than do other firms (see Davidson and Neu, 1993). However, Park (1990) did not find any evidence that Korean offices of the Big Six firms were more resistant to management pressures than local firms. He offers several explanations for his finding that Big Six firms issued more clean opinions. These include the possibility that large international audit firms screen their clients before accepting an engagement to ensure management integrity and quality, unidentified firm-specific factors, and clients with limited overseas investments who would not benefit from an auditor with an international reputation. This is a relatively unexplored topic, in an empirical sense, and much work remains to fully investigate this issue.

The models of audit fee determinants reviewed in this paper, while similar and generally well-specified, are not comprehensive. Incorporation of a number of other unobserved or unmeasured variables related to the audit process (planning, documentation and evaluation of internal controls, testing and reviews) and audit risk (inherent risk factors, effectiveness of internal controls and the internal audit function, going concern considerations, complexity, adequacy of disclosures, etc.) into these models could further improve the explanatory power of models of audit fees. More importantly, empirical data on how these variables affect audit fees, and differences in their significance across different international audit markets, will add to an understanding of how markets for audit services are affected differentially by deviations in economic, social and cultural conditions. As a related caveat, caution is warranted when making comparisons of studies conducted in more developed economies with those of countries such as Singapore, where audit fees of manufacturing companies were not well explained by the basic audit fee model.

The conflicting results of some prior studies[9] identify the need to exercise care when studying "large" and "small" audit markets. The measure of client size can impact on

conclusions or the competitiveness of markets, scale economies and product differentiation.

Finally, only one study to date (Iyer and Iyer, 1993) has examined the potential effects of mergers among several of the former Big Eight audit firms on audit fees. Similar studies conducted in other countries may provide valuable information to the public and policy makers on the effects of increasing supplier concentration in the market for audit services. This study also raises questions of other consequences of mergers among large audit firms, pertaining to the realignment of clients and industries within the Big Six and changes in firm efficiencies following these mergers.

NOTES

1. In the United States, the "Big Eight" accounting firms were, in alphabetical order, Arthur Andersen, Coopers & Lybrand, Deloitte Haskins & Sells, Ernst & Whinney, KPMG Peat Marwick, Price Waterhouse, Touche Ross and Arthur Young. The "Big Eight" were reduced to the "Big Six" in 1989 through the mergers of: (1) Deloitte Haskins & Sells and Touche Ross to form Deloitte & Touche; and (2) Ernst & Whinney and Arthur Young to form Ernst & Young. Similar realignments took place in the firms' international affiliates. All of the "Big Six" firms have significant non-U.S. practices and conduct audits through their international affiliates in developed and developing economies around the world. The terms "Big Eight" and "Big Six" are used through the paper to refer to the structure of these firms at the time the related research was conducted.
2. This form of the Herfindahl index is from Mozier and Turley (1989). See also Eichenseher and Danos (1981), and Yardley et al. (1992), for other formulations of the Herfindahl index and discussions of its use in studies of auditor concentration.
3. See Eichenseher and Danos (1981), and Yardley et al. (1992) for a discussion of the use of these measures in studies of audit market concentration.
4. "Listed" New Zealand companies are those traded on the New Zealandd Stock Exchange. Listed companies are analogous to *publicly-traded* U.S. companies.
5. Arthur Andersen did not have a significant presence in New Zealand at the time the Johnson, Walker and Westergaard study was conducted.
6. See Yardley et al. (1992) for a discussion of the increase in U.S. auditor concentration during the period 1955-1988.
7. See Shepherd (1990) for an extended discussion of industrial organizations, including the effects of supplier concentration on market structure and supplier behavior.
8. The eight largest audit firms in Canada during the early 1980s were, in alphabetical order, Arthur Andersen, Clarkson Gordon, Coopers & Lybrand, Deloitte Haskins & Sells, Peat Marwick, Price Waterhouse, Thorne Riddell and Touche Ross.
9. Compare, for example, the differing results of Francis (1984) and Francis and Stokes (1986) on the client size variable in prior audit fee research.

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Setting a Research Agenda for Auditing Issues in the People's Republic of China

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Key Words: Peoples Republic of China (PRC), auditing research, international accounting.

Abstract: *This paper identifies a number of potentially meaningful auditing research issues that arise from the dramatic changes currently taking place in the Peoples' Republic of China. These issues arise in the current economic environment, but are heavily influenced by political, cultural and historical circumstances. The research identifies organizational, technical practice and economic issues that impact the practice of accounting and auditing. The recent growth in the profession is evidence of the critical role accountants and auditors will play in future economic advances in the PRC. Research can also assist in identifying and resolving problems that may arise during the change to a "socialist-market" economy.*

The author participated in numerous meetings in Beijing, Shanghai, and Shenzhen with Chinese auditors, representatives of the Ministry of Finance, Chinese and International auditing firms, educators, venture capitalist firms, private business advisors, and stock market officials in the Summer of 1994. He was a member of an accounting delegation organized for this purpose. The group was composed of nearly 50 corporate financial executives, public accountants, and educators representing 11 countries. The two-week People to People International program provided rare direct meetings and one-on-one opportunities to share knowledge and increase mutual understanding between Chinese accounting professionals and their international counterparts (see Table 1). These meetings provided an opportunity to put contemporary Chinese accounting thought and culture in perspective with the current economic boom.

Napoleon once stated something to the effect of "Let the Chinese dragon sleep, for when it wakes up it will astonish the world." An unprecedented level of growth and development is now underway in this economy of nearly 600 billion dollars (*US News & World Report,* 1994). The nation, home to 25% of the world's population, is definitely strengthening its economic muscles. What was once a cloistered communist society has

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Table 1. Scheduled Meetings and Interviews

Ministry of Finance	7/29/94	Beijing
China Association of CPAs	7/29/94	
Deloitte, Touche Tohmatsu-China	7/29/94	
PROC State Taxation Bureau-Foreign Tax Department	7/30/94	
China Certified Accountants and Financial Management	7/30/94	
Shanghai Audit Bureau	8/2/94	Shanghai
Zhong-Hua (Shekou) CPAs	8/2/94	
Shu Lun Pan CPAs	8/2/94	
Dept. of Accounting, Shanghai University of Finance and Commerce	8/3/94	
Price Waterhouse Da Hua	8/3/94	
Shenzhen Office of China Certified Accountants and Financial Managers	8/5/94	Shenzhen
Shenzhen Stock Exchange	8/5/94	
China International Finance Company, Ltd.	8/5/94	
Zhonghua CPAs	8/5/94	
KPMG Peat Marwick (Hong Kong)	8/5/94	
Price Waterhouse	8/5/94	
Shenzhen Shekou Schinda CPAs	8/6/94	
Shenzhen Stock Exchange	8/6/94	

Note: Various personal interviews of individual auditors, financial advisors, Chinese CPAs and businessmen currently investing in China. Informal meetings were also held with other organizations and corporate representatives.

become a center for high level economic discussions and partnership with nearly every industrialized society in the world.

Observers of the economic environments of the Commonwealth of Independent States (Soviet Union), Central Europe, and Latin America will find the China experience quite different for a variety of reasons. What is really different and may bring China closer to realizing its economic potential is China's creation of a unique "socialist-market" economy wherein investors are invited to bring their capital, technology, and management skills to the table to create a "partnership" with the People's Republic of China. It is a long way for a culture to travel from the philosophy of "from each according to their ability, to each according to their need" to Paramount Leader Deng Xiaoping's concept: "To get rich is glorious." However the consensus is that current trends are now "unstoppable."

Because the current trends involve deep ideological issues (moving from a Communist, centrally planned economy to a more market based economy) and cultural changes (moving from a rural to a more urban society), there needs to be some structure to the change, lest the turmoil witnessed in the breakup of the Soviet Union be repeated. Similarly, keeping the lid on inflation and social disruptions can avoid the Latin American lessons, where investment was "scared away." Overseeing the current environment of change is the State Council of the PRC, which through its various Ministries (such as the Ministry of Foreign Trade and Economic Cooperation) tries to manage growth, dampen inflation, and steer away from "boom-bust" cycles. Past political and economic invasions of China by other nations have also provided a strong cultural impetus for China to maintain control over its economy, and not fall prey to another nation or industry or be dominated by one key service provider. Since China's market potential is so vast today, there is ample room for competitors to share in the wealth and enjoy profits.

DEVELOPING A RESEARCH AGENDA

The enormous changes underway in the PRC give rise to researchable issues that are both interesting and instructive. Properly focused research will provide insights to the differences in perceptions and culture that make the Chinese experience unique. While significant studies, such as *Accounting and Auditing in the Peoples Republic of China* (Lou, Wang and Enthoven, 1987) will provide a snapshot of the evolution of the accounting and auditing profession to the date of their writing, important research opportunities will emerge from an understanding of the environmental, cultural, and procedural changes currently underway. A successful research agenda will consider the historical and cultural issues affecting the Chinese economic experience. Some of the categories into which these issues may be placed include:

- *Accounting Issues*—Unlike the Western role of accounting in providing business communication and management information, in China, accounting has served the historical role of data gathering and compliance reporting. In response to the emergence of China into the international economic marketplace, new accounting standards are under development to meet the expanded needs of business and other financial statement users. Official communications have stressed that new accounting standards will be responsive to Chinese needs ("guo qing" means Chinese special circumstances) and will not be a carbon copy of any established body of literature. It is generally acknowledged that the lack of a strong accounting profession and modern accounting standards are a constraint on China's rapid growth, and work against orderly capital markets (Sweeney, 1993 and Zhou, 1988, p. 220).
- *Auditing Issues*—The public accounting profession in the PRC is sanctioned and regulated by the State. As its society moves towards a market economy, the profession will be challenged to assume different roles with a new constituency, master voluminous accounting and auditing standards concurrently (e.g., IAS, GAAP, Chinese) and be responsive to continuous change in the domestic accounting standards as well as expand its ranks ten-fold or more in a few short years.
- *Economic Issues*—Insights from research may provide clues to the factors and policies most conducive to productivity growth and economic success. Since the State will not be a by-stander in the development of the economy, the economic information available to policy makers needs to be timely and accurate. At a more microeconomic level, by observing the state of the securities markets and their response to important events, we will gain further insights into the information needs of the increasingly sophisticated users of financial information.
- *Educational Issues*—The simplification of accounting, especially during the period of the Cultural Revolution has created an immediate need for advanced accounting and auditing theory in education, however, there is a severe shortage of senior professors with market economy experience as well as a shortage of qualified professionals. These issues are interwoven in the following sections of the paper.

AN AUDITING RESEARCH AGENDA: AUDIT JUDGMENT AND AUDIT PRACTICE ISSUES

To understand fully the scope of the changes underway in the People's Republic of China, consideration should be given to the historical roots of the current environment. Wallace and Gernon (1991) have challenged us to go beyond the descriptive studies often found in the international accounting literature: "Where the literature extends beyond the descriptive, most of it has failed to develop a coherent explanation of how and why accounting systems differ from country to country." For the most part, the historical story of accounting and auditing developments in China, to the late 1980s, has been documented (Lou et al., 1978 and Lau and Yang, 1990 and Wei et al, 1992). These studies document the state of affairs in their timeframe, but the speed and direction of change in this international laboratory of capitalism and socialist government require constant updating. The current pragmatic approach followed by the Chinese ministries in solving emerging economic problems hints that there is little reverence for past decisions and plans, therefore observed past trends may be misleading with regards to future directions. What is not often emphasized, but ultimately may be more revealing of future trends and issues, are the influences that deep cultural issues and past political experiences have played and will continue to play on developments. Such factors should be studied, as they contribute to an understanding of *why* policies and events make sense in the context of the Chinese environment.

Professional Issues

Some say that the profession of Chinese accounting disappeared after the 1949 Revolution that brought Mao Tse Tung to power (Cooper and Rose, 1994). Indeed, the years that followed transformed the accounting and auditing professions towards the then-existing Soviet model. Accounting became focused on reporting compliance with State economic plans, using a specified structure of accounts and following a sources and uses of funds concept. But it is commonly agreed that the period of the Cultural Revolution (1966-1976) marks a dark period for the profession, as accounting was overly simplified with the objective of making accounting accessible and understandable to the "masses," University professors were ousted and occasionally brutalized, and accounting theory all but abandoned (Winkel, Huss and Tang, 1992 and Lin and Deng, 1992). The consequence of this simplification on top of an already crude Soviet-based system was the loss of a generation or so of true accounting thought, and the absence of any need to reflect the nature of modern transactions or business concepts in the accounting system. In addition there was no need to define the information needs of any non-State user group or the security markets, as these concepts did not generally apply. This simplification also led to a variably skilled and weakly trained profession to perform the record keeping chores. During this period, it has been reported that some physically ill or injured workers were given desk jobs performing the detail transaction recording tasks. These workers became "accountants" by virtue of their tasks, not education or training. The lack of a formal hierarchical structure for the profession beyond the official direction by the State, and the cultural discouragement of creating distinctions between professions, seemed to create an effective merger of the tasks of bookkeeping and more sophisticated accounting practice under a single professional heading.

Today, the accounting and auditing professions remain under the (separate) direction and regulation of the State. The Ministry of Finance is responsible for promulgating accounting laws. Through the Accounting Affairs Administration Division and also the Industries and Transportation Financial Management Division of the MOF, general rules and around a dozen industry-specific sets of accounting and financial guidelines have been issued (Wong, 1994 and Winkle, 1994). The Ministry of Finance also oversees the agency (CACPA) regulating the profession of Certified Public Accountants that audit *private* enterprises. However, a wholly separate organization, the State Audit Administration, oversees the province and local auditing agencies that perform required audits of State enterprises. Both the Ministry of Finance and the Audit Administration report separately to the State Council. The systems traditionally audited by Chinese auditors have had little to do with the profit concept or accounting systems created for the purpose of reporting financial position or the results of operations, but were based on the sources and applications of funds concept (Lou et al., 1987). Production data were used to monitor compliance with State goals and funds flow data were used for determining the amount of tax to be remitted by the economic unit. Consequently, auditing was focused on compliance with production reporting rules and taxation rules (see Lau and Yang, 1990).

The economic transformation underway is dramatically affecting the profession in many ways. Audits of Chinese public companies must be performed by a CPA firm registered in the PRC. Since licenses to practice independently in China have not been granted to non-Chinese international firms, the larger international firms have formed relationships with registered Chinese CPA firms, and thereby can serve the local and international needs for audit, tax, and other separately licensed services. This audit mandate includes many joint ventures, the most common form of foreign participation in investment and Foreign Investment Enterprises (Coopers & Lybrand CICA, 1994). Each of these different entities is subject to differing accounting principles as most recently enumerated in *Accounting System of the People's Republic of China Concerning Foreign Funded Enterprises,* effective July, 1994 and the 1993 *Accounting Standards for Business Enterprises.* In addition there are more than 13 industry-specific accounting guidelines and 10 financial management guidelines, each independently prepared by different divisions of the Ministry of Finance (Wong, 1994, p. 67). As a result, the skills, experience, and training of the auditing profession in China must keep pace and the profession must transform itself to serve the many types of enterprises under its expanded responsibility. The new market economy business environment, including the need for more frequent reporting, the existence of complicated business transactions, the complexity of many new accounting standards and standards of different countries as well as the increasing risks due to fraud and corruption, are challenging the skills of the auditors. In meetings with auditors from some larger Chinese auditing firms, it was evident that the concepts of competition, pricing of services, and developing new services to serve clients was a subject of interest and curiosity.

The current structure of the profession in the PRC is sufficiently different from that in most Western countries to validly raise basic questions concerning independence and responsibilities to user groups. Ownership of Chinese CPA firms can take several forms. First, there are "State owned" firms that are overseen by or under contract to, for example, the Shanghai Audit Bureau in Shanghai and Dozhe, and CPAs, responsible to the local Audit Administration in Shenzhen. They note that they remit any remaining

profits from operations to the State. The Shanghai Audit Bureau has a responsibility to audit 20,000 State enterprises over an unspecified period of time, auditing about 2,000 enterprises each year. Dozhe reports that it has 400 clients, including over 20 listed companies. Audit reports of State enterprises go both to the auditee and the State. The auditee must comply with the auditor's recommendations. State auditors have had broad powers to freeze State auditee bank deposits and impose punishments on managers with Audit Administration approval (subject to appeal) to obtain compliance (Lau and Yang, 1990). Secondly, there are privately owned firms that may offer approved accounting, auditing, consulting, and tax services and openly compete for clients. While profits may be reinvested or retained by the owners of these firms, they must first distribute from "profits" State-mandated social payments for risk funds, housing, and development (10% of the remainder goes to each). Private CPA firms may also contract with the State to audit State enterprises. All firms are responsive to oversight by the local Audit Bureau, itself under the supervision of the State.

Competition is creating significant challenges for Chinese CPA firms who even today proudly recount how clients would previously "come to them" because of their prestigious reputation. Significant interest in the pricing strategies of Western firms was expressed by some CPA firms. The approach to the setting of fees for not-for-profit enterprises seemed to raise the most questions. The lack of competitive bidding experience on the part of many of the Chinese CPA firms and the newly sharpened focus on developing value-added services as a client service as well as a competitive tool imply a period of significant change in the way the auditing will be practiced going forward. Case studies of successful transitions made by pioneering firms can be helpful in providing guidance and education to the other firms later undertaking these changes so that audit quality and professionalism are maintained during the transformation process. The existence of several different types of auditing firms may create opportunities for researching pricing, audit approach, audit technology, training, as well as attitude and audit judgment differences between these groups.

Other entities may also have ownership interests in CPA Firms. Affiliation of the profession with other entities is rooted in the historical need for a business entity to provide housing and health care for workers. Shanghai University cites its ownership interest in Da Hua CPAs, one of the large CPA firms in Shanghai. Price Waterhouse & Co. is also a joint venture partner with Da Hua. It is not unusual that senior professors from the University hold significant roles in CPA firms, concurrent with their academic positions. It is reported that the multiple employment relationships of senior professors exist because of the perceived prestige they bring to their business affiliations. The business cards of some senior Chinese accountants reveal the multitude of concurrent relationships possible under current regulations. One example included: Professor (of University), Chief (of CPA firm), Executive Director (Appraisal Society), Executive Director (Accounting Society), and Vice Chairman and Secretary General (Accountants Study Society). Another card noted: General Manager (of CPA firm), Supervisor (of a Stock Exchange), Director (Accountants Research Society). Additionally, Ministry of Finance, private CPA firm, academic and Professional Society leadership roles were identified for one very senior professor. Further market sophistication may raise issues that reflect on these multiple and potentially conflicting relationships.

Amidst all this ownership flexibility, the concept of legal liability extending beyond the firm to its owners does not appear to exist. This may in part be due to the lack of an unlimited liability concept, as in a partnership, and the lack of a developed legal

environment in which to apply this concept. Additionally, to date there has not been any mandate that CPA firms be organized under any specific legal or entity structure. A culture which historically values negotiation and consensus for conflict resolution may have obviated the need to consider these issues until pressed by further economic advances. How the professional environment will evolve in light of the economic changes underway is unclear, but there appears to be potential for dramatic change. Western society's struggle to balance competitive pressures and audit quality are indicative of the issues soon to be faced by CPAs in the PRC. The absence of a strong legal environment may ensure many differences in the way the profession in the PRC meets these challenges.

Competitive issues can also be more complex in this socialist-market economy. Prior to recent reforms, clients often sought out audit firms, and not the other way around. Now, there is a trend toward competition. However, in order to audit foreign owned or joint venture companies or Chinese stock companies listed on the exchange as mandated by law, firms must first be approved by the State to be able to perform this service, so competition is effectively limited by this approval process. Approval to perform these accounting services is granted on a case-by-case basis and objective certification guidelines are not the only factors considered. "Competition" is also used by the State when allocating licenses to practice certain accounting and auditing services. Thus, there can be technical, political and economic issues involved in this important process. In the cities we visited here there were reported to be at least a half dozen or so firms licensed to audit joint ventures or companies listed on the Stock Exchanges in each location. Firm representatives took pride in their special status. For example, to perform valuation services which are so important to proposed joint venture enterprises (yet so complex due to the less well developed market economy), State approval is required. The State has demonstrated that it may also intervene directly in the competitive process by allocating audits to various firms. In a recently reported incident, the desire to prevent an onslaught of competitive presentations and bids for an upcoming series of newly listing stock companies, caused the State to "allocate" audit assignments to the qualified firms attempting to bid (International Accounting Bulletin, 1993, p. 5). To some extent, competition for other key market services and contracts such as in technology related fields and infrastructure industries is also controlled (e.g., Kahn and Jordan, 1994). How this intervention tendency will affect the industry concentrations of audit firms, and the impact of these factors on competitive pricing and other practices would be an interesting research project of significance to the profession as it matures.

The dizzying demands to keep pace with the local as well as the international accounting standards as dictated by the accounting and reporting needs of the investors in China, have been eased lately by the alliances formed between the large international accounting and auditing firms and select Chinese firms. However, language and culture barriers create interesting anecdotal stories of these "marriages" of skills and resources and value systems of these groups. It would be interesting to explore whether these issues might impact audit judgments and alter performance, and in what way if any. Researchable issues include perceptions of both groups toward the other, and the potential for those perceptions to influence decision making. Could such cultural issues, such as respect for seniors, a general mistrust of foreign influence and power, the desire to avoid direct confrontation and research agreeable compromises, as well as the concept of "saving face", create issues that go well beyond the standard research formulations

of questions of audit judgment consensus and skill in applying and interpreting audit results.

Other cultural attitudes could also be important to audit judgment, such as the attitude of the people towards Beijing mandates. The spirit of independence from laws and regulations becomes more pronounced with rules that are not understood or not popular, and also becomes more pronounced as one travels South, to the more economically developed regions in China. Within the general society, it is reported that unpopular or confusing regulations may sometimes be simply ignored. There is a long-standing saying in the Southeastern provinces: "The heavens are high, and the Emperor is far away," meaning a general sense of freedom from the "rules" in these regions. Nevertheless, there is an overall cultural respect for and obedience to near-by authority. This is particularly evident in family matters and the immediate work environment. Family business relationships are very common, often leading to the subordination of individual interests to meet overall family goals and needs. Will the historical trait of only doing business with individuals where a personal relationship has been established impact a profession that has struggled in Western society to guard its perceived independence? What issues of training or supervision should be recognized as a result of cultural and societal attitudes? Are there issues that relate to the historical isolation or independence of some provinces that could influence audit judgment, teamwork and performance? Research can be effective in identifying issues that will advance the profession's importance and image in the developing economy.

There is a severe shortage of accountants, financial managers and auditors in China, especially those who have experience with market economy transactions and International Accounting Standards and Western financial reporting practices. Numbers quoted to us and reported in the newspapers such as *China Daily* (8/6/94), indicate that hundreds of thousands of additional professionals may be necessary to meet the demand in less than a decade; far in excess of the 25,000 or so CPAs today. This is not surprising in such an enormous country after 45 years of partial economic isolation. But the story does not stop with the numbers. Of the 25,000 or so current CPAs, many of these current experienced professionals achieved their certification by work experience and not by the current required examination, and in times of simpler accounting and auditing rules, prior to the current explosion of economic complexity. The August 6, 1994 issue of *China Daily-Business Weekly* carried an article stating that over 115,000 had applied to take the next Chinese CPA exam. Given the complexity of the current environment, it would be insightful to analyze the content of these examinations in accounting, auditing, and tax relative to past examinations and the demands of the practice environment to be faced by these professionals. A profession in the midst of such dramatic change should produce measurable changes in social and intraprofessional perceptions and growth in professional skills in applying audit techniques. Feedback on the methods and procedures that are successful in bridging the current and future professional environments can be essential educational materials for the profession as it evolves. For example, the "pass" rate over the past three CPA exams has increased from 5% to 14%, with successively larger numbers of candidates sitting for the exam. Not evident in the aggregate data is the "first time" versus "repeat" pass rates. However, educators may have an interest in evaluating the impact of changes in the exam itself versus the better preparation of the candidates sitting for the exam in explaining this result. In meeting the strong demand for certified authors, there is always the concern that 'the river may be raised, or the bridge will be lowered.' Research may help untangle this question.

Current shortages of accountants may become more apparent as more State enterprises are converted to private enterprises. Whereas most State enterprises do not need to be audited every year, the newly defined economic enterprises which are carved out of the old State enterprises are required to have annual audits. The remaining pieces of the former large State enterprise will still require a periodic examination, thereby increasing the strain on limited auditing resources. Half year financial reports are now being prepared by listed companies, and there is interest by the auditors and the Stock Exchanges in having some auditor association with these reports. Additionally, all foreign funded enterprises and joint ventures are required to be audited by Chinese CPAs by April 30, and reports submitted to the State. Accounting Law has set the fiscal year of all Chinese companies to be December 31, regardless of industry (Coopers and Lybrand, 1994 and Wong, 1994). These factors can all culminate in considerable time-constrained stress in an industry already awash in talent shortages, complexity, and rapid change. How are these stresses being managed and what compromises are necessary to balance the conflicting demands? The knowledge of successful strategies in dealing with these challenges can encourage continued quality among other professional firms during this period of rapid change.

The accounting profession in the PRC is also struggling with an image problem left from earlier economic times. While under pre-market conditions workers were officially not strongly distinguished based on their profession (all work was considered to be important) accountants seemed to enjoy relatively low status relative to some other professions, as far as that concept could be applied in that economy (Yu, 1994, p. 51). The simplification of accounting which accelerated in the Cultural Revolution accented this issue. Today, many Chinese are eager to become CPAs and see the accounting profession as a way to better substantially their position in life (Liu, 1994). Among the professionals there is a renewed pride and an enjoyment of increased status. These historical perspectives provide an interesting backdrop to identify current trends and differing societal perceptions of the role of accountants and auditors, their professionalism, and user expectations of their responsibilities. These issues could become important to the continuing growth of the PRC should any future downturns in investment and optimism lead to consequences for the profession and its growth and future.

While firm-sponsored training and the concept of Continuing Professional Education appears accepted and implemented, it is far less clear how periodic changes in the standards are communicated across the profession between the annual scheduled CPE training dates. In the absence of well established channels of communication within the CPA profession, or a central training or CPE program, "keeping current" will be a significant challenge. One observation of our visit is the apparent shortage of printed official documents, including the recently enacted accounting "conceptual framework" document or the individual accounting standards being considered in the "exposure" process. This difficulty in communication contributes to the differing quotations we received in August of 1994 of the number of draft accounting standards then currently on exposure: twenty-one, twenty-seven and thirty-three (at least a common element of estimates was that they were all divisible by three). Undoubtedly there was some confusion between those standards that were currently in place or in exposure, and those about to be released or in some stage of development. English translations of the standards are even rarer, and often "unofficial" translations in trade publications are called on to fill the void. Effective methods of transmitting, interpreting and teaching

the revisions to standards to established, practicing CPAs are necessary to ensure consistent practice. Research designed to evaluate the effectiveness of the standards' dissemination and communication process may lead to more effective communication strategies, leading to greater overall consistency and understanding.

Auditing Tools and Auditor Judgment

Based primarily on our interviews, the current audit toolbag of the Chinese auditor is somewhat limited. "Sampling" is used to gather detailed evidence, but concepts familiar from SAS 39 Audit Sampling (AICPA, 1981) such as setting a materiality level or tolerable level of misstatement, as well as concepts of projection, stratification, risk and the auditing of estimates do not appear to have been formally introduced. Analytical procedures do not appear to play a role in State audits, and their practical use in private enterprise company audits has been historically hindered in the past by frequent accounting rule changes without the need to present comparative or restated figures. Thereby, trends and interperiod ratio analyses were rendered less effective. Additionally, the small number of "peer" companies against which to compare results and the large number of enterprises in the start-up mode also hinder development of benchmarks for the effective use of analytical procedures. Since State enterprise audits have been traditionally compliance-oriented, there has been a need to gather hard evidence for the audit report. Additionally, since these periodic audits were not the result of comparative bidding, there was no economic incentive to develop and employ analytical procedures, which are generally considered by Western auditors to be helpful in reducing the costs of audits. There is tremendous potential for analytical tools to aid in the detection and prevention of misstatement, particularly in identifying potential fraud and corruption as well as improving efficiency in the use of limited audit resources. From a user perspective, the most commonly discussed technique mentioned for shareholder analysis was the use of the earnings-per-share statistic (also see Crossman and Toder, 1993). However, the Shenzhen stock exchange published in 1993 statistics on E.P.S., net assets per share, A and B share price-earnings ratios (A shares are only available for sale and trading to Chinese citizens, and essentially similar B shares can only be held or traded by foreign individuals or enterprises on a separate exchange), as well as return on equity and return on assets for some of the 46 B share companies listed at that time (*Shenzhen B Shares,* 1993). Users in the long run will find that the principles of financial analysis, adapted to the Chinese environment, can assist in identifying the "long-term" value of an enterprise, which may help stabilize the erratic, sometimes casino-like, domestic Chinese stock market. Effective research on user needs may assist in matching the growing sophistication of different investors for more and better reporting and disclosure without overwhelming users with too much information.

Expansion of the auditing techniques used, and concepts, such as the risk-oriented approach to audit planning, applied in practice can assist greatly in the development of the new skills and perspectives needed to address the increasing risks from fraud and corruption that plague many enterprises and are a source of criticism to the profession (Lau and Yang, 1990). The rapid expansion of the Chinese economy is acknowledged to have had an effect on both the historical and post-revolution Chinese attitudes toward money and wealth. As such, corruption, market manipulation, speculation, and fraud are becoming serious business issues and may actually create

social unrest if not curtailed (Cheng, 1992 and Chen, 10/13/94). At the beginning of 1995, the alleged widespread piracy of copyrighted materials and other intellectual property led to tensions that threatened to spark a trade war (Davis and Kahn, 1995). Research is needed on the types of problems actually encountered in practice and the corresponding audit tools that may be most effective in identifying and valuing these problems. There is no assurance that the tools and techniques appropriate to the types of problems encountered in a Western environment are equally effective in the Chinese environment. We need more information of the problems that are being encountered in the audits of Chinese enterprises to be able to suggest to auditors those approaches that will help them gain further perspective on accounting and business issues. Demonstrations of the value of tools such as analytical procedures and sampling techniques on Chinese engagements to examine the financial statements can be important motivators for change in the profession, and can lead to improved practices and increased respect for the profession and its methods by the general public.

AUDITING CHALLENGES BASED ON ACCOUNTING ISSUES

An assertion as to the fair presentation of the financial statements carries with it some implications about the accounting principles applied and the users of the financial information. Many reports recount the differences between Chinese and alternative accounting standards (e.g., Winkle et al., 1994). While differences between US GAAP and current Chinese principles for foreign and domestic owned enterprises are many, discussions with practitioners struggling with the day to day issues of practice, particularly when restating Chinese financial statements prior to a planned securities listing, identify a few very challenging issues that may be unique to this environment. These issues may also transcend the problems simply due to differing standards. One basic issue is the brevity of the standards established and openness to varying interpretations (Curran, 1994, p. 124). If, for example, the accounting rules are silent on the use of discounted cash flows, very different interpretations of the lease accounting rules could be made. In an economy where foreign investments and joint ventures can only *lease* land (purchases of land are not generally allowed) and in many cases buildings on a 50 year or shorter basis, lease accounting is important in valuation and presentation. To date, many lease terms require full up-front payments for land use, so the application of present value concepts may not be a pressing issue. However, this issue can accentuate the importance of understanding the process of accounting judgment and valuation from the context of the evolving levels of financial transaction sophistication, in addition to it being a theoretical and technical issue.

Many former State enterprises are being redefined to create new economic entities that will be looking to outside sources for financing and investment capital by listing securities of the newly formed entity on domestic or foreign exchanges. Most State enterprises do not conform to US GAAP concepts of an entity. In China, the principal business of a geographical region or Province might have been historically designated as the reporting entity, and made responsible for the education and health care of its citizens as well as employment and production (Sweeney, 1993). The State is now "carving out" business enterprises from these former social and economic units so they can be established as independent businesses. These newly "carved-out" enterprises are just now encountering the Western concept of the entity. Imagine the creative challenge

of defining the accounting boundaries of an entity that is designed to be an attractive investment enterprise (from a profit and balance sheet standpoint), but this entity will still have many related party transactions with formerly related business units that are now outside the new entity and many intracompany transactions as well (see *US News and World Report,* 1994, p. 85). Careful definitions of boundaries of the reporting entity can create the appearance of profitability while shifting losses (for a time) to a State-subsidized entity. Could this lead to the proverbial "silk purse..." problem? Are there potentials for shifting profits and losses from one business entity to another? At present there are neither regulations concerning, nor mandates to disclose the existence of what Western accounting defines as related party transactions. Accountants on the "front-lines" of restating the historical cost financial statements for these new ventures express concerns as to these issues. The need to develop market price transfer pricing approaches, the consistent elimination of intercompany accounts (Sender, 1992, p. 60) and the accounting for and the possible need to disclose related party transactions are relatively new issues in China. As such, they will take some time to be understood and applied in practice. New aspects of auditor liability may be created by the characteristics of the environment in which the audit takes place. What is the auditor's role or responsibilities in the definition of and review of transactions by these new entities?

Because of the joint venture accounting rules, foreign share ownership of the newly defined State enterprise can be 51% of the voting shares, but careful analysis of all the terms of the agreements negotiated can still raise questions of ownership and control. The composition of the Board of Directors as well as procedures for deciding issues where there are differing views, as well as the ability to remit profits freely can assist in determining whether consolidation or equity accounting is more appropriate. Earlier research on joint venture accounting (Hoyt and Maples, 1980) should be updated for the revised PRC law and the current challenging issues of implementation addressed, particularly as they relate to related party transactions and the treatment of intercompany accounts.

One culture shock for auditors steeped in the "risk-based audit" concepts of the 1980s, is the statutory limitation on allowances for doubtful accounts or the rule limiting the application of lower cost or market considerations for Chinese inventories. Damaged or spoiled merchandise may be written off, however. This practice is steeped in the State enterprise system, where all products were perceived as useful for *something, someday,* thereby obviating the need for obsolescence reserves or write-downs. Foreign enterprises may now create an allowance for doubtful accounts of up to 3% of ending accounts receivable. Bad debt allowance accounts for Chinese enterprises are limited to between 1/3 to 1/2% of ending accounts receivables. Once again history plays a part here. Since enterprises historically were, and most still are, State owned, State credit was always by definition "good", and bad debt provisions were/are generally unnecessary. There seems to be a "go-slow" attitude toward change that is reflected in the broadening of the Chinese principles to accommodate the expectations of business partners from more advanced nations.

The state of bankruptcy is rare; a State subsidy to failing enterprises was and is still more common. While the *going concern* concept is explicitly written into the new accounting law, what is not well understood is the *non-going concern* concept. No equivalent of the US Chapter 11 Bankruptcy laws exist as yet, and the State has often chosen to support floundering entities with loans or subsidies for fear that unemployment or social unrest could result (*WSJ,* 10/24/94 and *U.S. News & World*

Report, 11/14/94, p. 86). Additionally, since markets are not fully developed, the act of liquidation is difficult to implement. With land ownership in the hands of the State, and limited provision to sub-lease, transfer or sell lease rights without State approval and payments of State determined fees, liquidation of some enterprises could be very complex. While the recently enacted General Rules for the Financial Affairs in the Enterprises devotes four Articles (paragraphs) to the issue of liquidation, they mostly deal with the appointment of a liquidator and the order of liquidation of obligations (Articles 37-40). There is little experience to date in the PRC to provide detailed guidance in such circumstances. Accounting and auditing research on the issues of financial stress and business dissolution in the PRC could help businessmen, policymakers, and auditors in understanding and resolving such issues. The possible effects on audit procedures, the wording of the audit opinion, the reactions of financial statement users, and the impacts on credit and financing channels from recognizing the business reality of going concern issues in a "socialist-market" economy are as yet unclear.

A concern related to loss contingency and certain disclosure items comes from the absence of the need to disclose many of them under PRC accounting law. The lack of a mature legal system and effective means of contract enforcement contributes to the complexity of accounting presentation without the disclosure of issues of environmental and product liability, litigation, illegal acts, and other matters addressed in US GAAP and IAS disclosure standards. Companies sensitive to environmental issues may be challenged on their profit participation in an economy where air, water, and soil pollution is of monumental proportions (*NYT,* 9/25/94 and 3/27/94).

Matters of valuation can be troublesome to financial statement presentation. In an environment where market transactions may not be common, valuation can be very subjective. Land in the metropolitan areas is mostly leased by the State for a limited term. Existing buildings and equipment need to be valued, by sanctioned appraisers, to value the State's or other Chinese partner's capital contribution in a joint venture. Few objective transactions are available to create a fair value reference, and there is no experience on what will happen at the expiration of the land leases. Intangibles contributed by the partners forming a new venture however, are limited by law to 20% of the capitalized value of the enterprise, regardless of "fair market" value. A practical consequence of this is that the foreign investor may have to invest "hard assets", such as cash, in the joint venture in addition to technology and know-how in order to capitalize the enterprise. Thus, the limitations on the foreign entity intangibles percentage can raise the "real" stakes of a newly formed joint venture to the foreign entity beyond the amounts reported in the financial statements. How frequently and to what extent do these valuation limitations lead to the understatement of the economic contributions of the partners/and subsequently to the overstatement of the rates of return measured by the accounting system?

The regulated environment can sometimes cause as well as cure economic problems. Sometimes major policy changes can have unintended consequences. For example, the dual-currency rate system of China had previously been recognized as an impediment to rapid business development. On January 1, 1994 the termination of the country's long standing official currency rate was suddenly announced. At the time of the announcement, international auditors were in the middle of preparing the US GAAP adjusted historical cost financial statements of a "carved-out" State enterprise prior to listing its securities on an international stock exchange. Because of the elimination of the official rate, the significant dollar-denominated debt of the company nearly doubled

to respond to the new market currency rate, while historical cost assets continued at the old historical "official" rate. As a result, the company's entire equity was wiped-out. This effect, to say the least, was considered not particularly attractive for a first-listing of securities and has resulted in a delay of the listing. Additionally, the currency change effectively doubled the cost of importing many materials to China, including key inputs to many enterprises. In the wake of these and other issues, some discussion has taken place at the Ministry level concerning reinstating the official rate. Although recognizing the existence of dual currency rates, SFAS 52 makes no direct mention of how to respond to the *elimination* of a dual currency rate system (FASB, 1981).

There is little base understanding of users needs and expectations of the financial information being presented in published reports. Yet, user needs and expectations are important elements in setting the scope of auditing procedures to be performed. In a recent *New York Times* article, China's Premier Li Peng noted that there could be a serious backlash from stock market losses: "If people suffer losses, they will go to the government because they think loss isn't normal" (11/22/94, p. A19). As stated by Morgan Stanley's Brigs Barton "I am disconcerted by the view that no one thinks he can lose money here" (Curran, 1993, p. 116). Do such attitudes encourage "bad news" to be delayed or disguised to a greater extent than observed in other environments? Because of the historical reliance on financial accounting to identify tax due, the State also becomes a user in the current environment, as tax and accounting laws and concepts of profit are generally still in harmony. To what extent are auditors exposed to user disappointments that will inevitably occur and what form of reaction might these disappointments bring? Clearly little is known of these issues in this environment. Their clarification could assist auditors in such detailed tasks as setting appropriate levels of materiality that are responsive to user expectations when setting the scope of auditing procedures to be applied to transactions and disclosures.

Other Issues of Audit Practice—Language

There are a variety of issues that would be interesting to study from a group decision-making and professional auditing practice standpoint. One encountered in practice is related to language. The expansion of the economy and rapid travel to various regions and cities within this huge country has accentuated the importance of a long-standing problem. While the PRC shares a common written language, dialects of the North (e.g., Mandarin) and South (e.g., Cantonese) as well as 900 local dialects in cities and provinces are sufficiently different to impede oral communication across the country. There are also cultural issues that encourage an attitude of separateness and independence between the provinces. English, while now taught extensively, is still not readily understood in oral communication or spoken. Interestingly, however, the Shanghai University of Finance and Economics (SUFE), has instituted English as the official classroom language for its accounting courses and also uses Western accounting textbooks. Leading American universities, such as Rutgers University in New Jersey, have formed strategic alliances with Chinese businesses and universities to provide Western educational programs and cultural exchanges for businessmen and students. Many different efforts are under way to enhance general business communication including mandatory instruction in Mandarin (the official language) for southern Chinese. Additionally there is continuing universal emphasis within China on mastering

English as "the" business language, and a growing interest on the part of some transplanted managers and businessmen in learning Esperanto (an "easy-to-learn" world-language with easy grammar rules and simple pronunciation) to meet basic daily communication needs. Examples of effective solutions to this knotty problem could greatly enhance practice and assist commerce.

ECONOMIC ISSUES WITH AUDITING IMPLICATIONS

The domestic stock market in the PRC is generally acknowledged to be one of the most volatile in the world. Trading volumes and prices are subject to wide swings. For example, an apparent false rumor can send the domestic market plummeting over 40% in a single trading day (Kahn, 11/9/94). Various actions, including the investment of a portion of the pension funds under State supervision are being tried to provide stabilization to the market (Kahn, 10/13/94 and Kahn, 11/9/94). Are such policies effective, and can the speculative nature of the current market be distinguished from actions based on relevant events and financial information? Even the State leadership describes these markets as "experimental" (House, 1994) as a means to reduce expectations, but these markets are a significant element in the economic advances underway in the PRC and much attention and effort has gone into developing technologically advanced world-class exchanges in Shanghai and Shenzhen. Do we understand the role of financial reporting in this environment that is sometimes unkindly described as "casino-like." What implications might this hold for the author? For example, in truly speculative markets, one might find that users require less detailed financial information, and have higher thresholds for misstatements and disclosures.

In addition to the shares traded to Chinese citizens on the exchanges, a wholly separate market exists for essentially the same ownership securities, except they can be sold and traded to individuals outside of the PRC. This market, called the "B" share market is considerably less volatile and sells at more modest multiples of stated earnings (e.g., 10 time earnings on average vs. 20 for the "A" share market) (Crossman and Toder, 1993 and Table 2). Additionally, B share financial statements are restated to International Accounting Standards and denominated in Hong Kong dollars while the local currency A shares are prepared in conformity to Chinese Accounting Standards and are traded and denominated in Yuan (approximately 200 billion capitalization). Some companies also list securities on the Hong Kong exchange. These shares are often referred to as "H" shares. In few marketplaces in the world are essentially identical securities traded in separate markets, disclosing financial information prepared in accordance with different accounting standards and in different currencies. Are there information inequities that are created for these markets by the business and political environment? The relationship of the various share markets (A,B, and H, etc.) is one of economic interest, as similar securities seem to be separated by an artificial "great wall."

Regulatory issues and public policy issues abound as the emerging stock exchanges try to set rules to promote economic growth, attract capital, reduce insider trading and market manipulation, and cope with corruption. Intervention in the market process is undertaken regularly to promote the goals of the capital markets. For example, in the Summer of 1994, in response to a sagging demand for the "A" share market, the listing of any new issues was temporarily halted until the exchange recovered (Jie, 1994).

Table 2. Sample Share Statistics: Shenzhen Stock Exchange (6/30/93)

Co. Name	*A share H/L*	*B share H/L*	*A share PER*	*B share PER*	*1992 PER A/B*
Shenbao Industrial	23/9.5	9.5/2.5	42	10	74/26
Shenzhen Huafa Electronics	22.6/7.8	16/3.1	42.1	17	67.8/23
Shenzhen Petrochemical	28.1/18/75	12.1/5	27.9	14.3	69/27.4
China Southern Glass	33/16.6	16/4.6	26.7	30	80/32
Shenzhen Konka Electronic	28.6/8.6	23/5.52	5.6 to 23.6	2.5 to 13	9 to 44 (A) 4.4 to 20 (B)

Notes: H/L = High/Low Trading Range
PER = Price-Earnings Ratio
A shares are traded in RMB (Renminbi is the official PRC currency)
B shares are traded in H.K. Dollars
Data inconsistencies, inaccuracies and the recency of some listings restrict comparisons of all 17 listing companies at 6/30/93

Source: *Shenzhen Stock Exchange.* 1993. Shenzhen B Shares.

Research and the sharing of views may help identify those measures that promote effective policy decisions and achieve the long term goals for these economic institutions.

Underlying all of these factors is the question of what role (at this time) do financial statements play in investment, credit, and other business decisions. After all, most business and credit arrangements undertaken in the PRC in the past had more to do with personal relationships ("guanxi") than with financial position. Even today, employing local facilitators and local advisors is a common way for enterprises to make sure they are properly introduced to those individuals with whom a personal relationship is somewhat the "price of admission" to doing business in the PRC. In a system where the legal system is just developing and has not been seriously tested, financial statements may have a less important role in decision making.

What are the expectations of stakeholders and potential stakeholders in this marketplace? If after the years of experience in the US there exists an "expectations gap," how wide could this chasm be in the PRC? If the current expectations of shareholders, creditors, and businessmen were understood, would it lead to different accounting principles and different disclosure requirements than those proposed by the rule-makers in Beijing? How are financial statements currently being used, and what are the issues users are concerned with? Outside of a very simple earnings-per-share measure, few analysis techniques appear to be commonly applied. Additional learning and education on the part of investors may help investors base more decisions on sound economic principles and thereby contribute to the stabilization of the capital markets.

Research can help identify the effectiveness of policies, such as the recent use of credit regulation to dampen inflation, a targeted State goal (Chen, 11/10/94). Models of economic performance will need to consider the consistent involvement of the State in public policy as well as microeconomic issues such as approving credit, obtaining company foreign exchange and approving imports and exports of materials. Tax incentives may distort the long term predictive value of the early returns of joint venture enterprises. These enterprises presently enjoy a two tear tax holiday and tax reductions and incentives that can last well beyond this period. Special Economic Zones set up throughout China, such as in Shenzhen, can vary dramatically the costs of production

and ease of obtaining approval for proposed business ventures. Immigration-like measures control the flow of labor at the physical borders of the designated Zones. Chinese citizens must have approval for entering the economic zones to prevent unauthorized labor from overwhelming the market or socially destabilizing the region, as can happen in uncontrolled areas (see *NYT,* 6/29/94). Do accounting principles reflect the substance of the new transactions being undertaken in response to the economic changes?

It has been noted that there has been a lack of productivity research in China for key industries such as the iron and steel industry, complicated by deficiencies in the data and the accounting systems used (Jefferson, 1990). Such measurements can help chart the contributions of technology and modern management techniques and provide benchmarks for owners and planners to chart the progress of the economic development process. More recent studies may provide insight into the elements of the reforms that are most successful in sparking growth and productivity (Jefferson, Rawski and Zheng, 1992). The extent to which additional growth in the maturity of the managerial accounting functions will contribute to better measurement and further insights is a matter for future study.

SUMMARY AND CONCLUSION

The areas of useful research in accounting and auditing in the People's Republic of China are similar to those in other areas of the world. What is most important in this international environment is the unique blend of historical and current economic and political issues that have preceded current events and continue to shape future events. An understanding of the history and culture of the Chinese people, as well as the business environment can help researchers identify worthy and meaningful research projects that contribute to the continued accounting and auditing advancements and growth in the profession's stature in this part of the world.

As with most "hot" investment opportunities, following the initial period of high enthusiasm, it would not be unusual for there to be a period of disillusionment and retrenchment. Such caution-filled articles are already appearing in the popular press. However, if the common pattern is followed, a period of honest reappraisal and realism in expectations is likely to follow, and the real period of long term growth then can begin. Properly posed research can help to identify relevant issues and evaluate the effectiveness of alternative strategies for addressing these issues. Knowledge of the current challenges in the Chinese economy can assist researchers and policy makers in setting priorities. Additional communication and understanding are needed between the more developed nations and the People's Republic of China. Through mutual cooperation of international scholars, advances in research can lead to effective and practical advances in the PRC and in different countries and assist in the development of the economies of the world.

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An Analysis (Meta- and Otherwise) of Multinational Transfer Pricing Research

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Key Words: Transfer pricing

Abstract: *Existing research does not fully explain the relationships between environmental and organizational factors, and transfer pricing method choice by multinational corporations. Traditional narrative and meta-analytic reviews of twenty-one studies are presented in an attempt to integrate contradictory and/or non-reinforcing results of prior studies and draw conclusions as to their overall importance.*

The attempt at meta-analysis was marginally successful, at best. While many studies exist, few are consistent in reporting findings in terms of variables studied, statistical tests used, and data reported. Only two factors were consistently reported with enough data for a meta-analysis (size and industry).

More research needs to be done on multinational transfer pricing method choice that includes rigorous statistical analyses of the data. Future research must also be extended to consider financial factors, in addition to the non-financial factors already studied. Suggestions are given for extending the scope and depth of research to allow for an integration and/or synthesis of future transfer pricing research.

The pricing of tangible goods and intangible assets transferred between parent multinational corporations (MNCs) and subsidiaries in other countries presents serious challenges to management. Operating in a complex and variable sociopolitical and economic environment, most MNCs attempt simultaneously to maximize profits, minimize taxes, and meet other corporate objectives while complying with the tax regulations of their parent country and of the host countries in which their subsidiaries operate.

Since the 1970s, many empirical studies have addressed how a company chooses the transfer pricing method which is optimal for its environment. Factors which have been extensively studied include the objectives of transfer pricing, tax/tariff/customs regulations, organizational characteristics, environmental variables, and host country constraints. While some findings are complementary, others are contradictory or, at best, non-reinforcing. Does the industry or size of the MNC influence transfer pricing

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method choice? Do certain MNC objectives favor particular methods? Is tax minimization the primary objective?

This study addresses the empirical transfer pricing research undertaken since 1974. This period was chosen because this area of research became prevalent in the 1970s, with much of the research since then drawing samples from the same or similar MNC populations. This study is further limited to multinational transfers, because domestic transfers occur in a simpler economic and political environment, and are not affected by multinational tax, tariff, customs, currency, and host country factors.

By analyzing the studies traditionally, and then meta-analytically, some factors affecting method choice can be more clearly identified, and the decision-making process better understood. In meta-analysis, the results of the studies are combined and statistically analyzed to determine whether certain factors across studies are significantly affecting method choice, or if the "significant" results of some studies are due to sampling error. Understanding how an MNC chooses its transfer pricing method could influence the tax regulations, particularly Section 482 of the Internal Revenue Code (hereafter referred to as Sec. 482). There are currently almost $10 billion in transfer pricing allocations in dispute in the Federal tax and claims courts due to disagreements between the MNCs' chosen methods and the methods recommend in Sec. 482 by the U.S. Internal Revenue Service (IRS) (Bureau of National Affairs, DTR No. 204, 1993).

The next section describes the state of current transfer pricing practice, followed by the methodology used to identify and analyze the relevant studies. A traditional narrative review of each study is followed by meta-analyses of those studies. Finally, conclusions are drawn, and implications of the findings for future research discussed.

THE CURRENT STATE OF TRANSFER PRICING

Many MNCs use transfer pricing to assign a cost to tangible goods or intangible property transferred between the parent company and divisions, or between divisions themselves. These divisions (or subsidiaries, segments, business units, etc.) may operate in the parent MNC's home country, or be based in other countries.

The methods used to arrive at a transfer price may be market-based (actual or adjusted), negotiated, cost-based (using variations on full, variable or marginal costs), or the results of mathematical/programming models.[1] Models of multinational transfer pricing choice (Abdallah, 1989; Borkowski, 1992a) address these methods in relation to the economic, organizational, sociological, political, legal, and environmental factors that can affect an MNC's decision.

Most countries have specific tax policies and regulations regarding the pricing of transferred goods by MNCs operating in those countries. The choice of a transfer pricing method by MNCs is therefore influenced by the parent country's tax code, suggesting that any analysis of existing research should be separated by country. The analyses presented in this study are therefore limited to MNCs based in the United States for two reasons: the specificity of Sec. 482, and the reality that most empirical research in international transfer pricing is directed at U.S.-based MNCs. Sec. 482 defines the regulations regarding the pricing of inbound and outbound transfers between U.S.-based parent MNCs and their non-U.S.-based subsidiaries, and is the cause of many disputes currently in adjudication in the U.S. courts. The I.R.S. may reallocate income to reflect the economic realities of transfer pricing transactions if it believes that the

transfer pricing method manipulates, rather than fairly allocates, taxable income between parent and subsidiary.[2] An MNC's transfer pricing choice can be a costly decision if challenged by the I.R.S., and past research in this area must be addressed as a cohesive unit in order to draw any conclusions about the decision-making process.

META-ANALYSIS METHODOLOGY

Typical research on transfer pricing issues is characterized by primary, or original, analysis of data and/or secondary analysis, which reanalyzes existing data "for the purpose of answering the original research question with better statistical techniques, or answering new questions with old data" (Glass, 1976, p. 3). How can logical and defensible conclusions be drawn from the scores of existing transfer pricing studies undertaken during the past twenty years when these studies used different statistical techniques, addressed some shared and some study-specific variables, and yielded sometimes contradictory findings, of which some were significant?

Meta-analysis is a useful approach to synthesizing quantitative research findings when there are multiple studies addressing the same research question, in this case, what influences the choice of a transfer pricing method. Glass (1976) defines meta-analysis as "the analysis of analyses...the statistical analysis of a large collection of analysis results from individual studies for the purpose of integrating the findings" (p. 3). It accumulates the statistical findings of related studies to integrate or synthesize their findings and determine whether differences in independent measures across those studies are real, or artifactual. Meta-analysis procedures are useful in summarizing relationships, determining moderator variables, and establishing relationships across studies (Rosenthal, 1991). While widely used in the social sciences, meta-analysis has had limited application in accounting and finance due to the lack of consistency across studies regarding sample type, statistical methods, and variables analyzed. For accounting and finance applications, see Hite (1987) on bankruptcy prediction studies, Capon, Farley and Hoenig (1990) on determinants of financial performance, and Trotman and Wood (1991) on internal control judgments of auditors.

Meta-analysis seemed an appropriate methodology given that most empirical transfer pricing studies drew samples from the same population, identified transfer pricing method choice as the dependent variable, and assessed many of the same independent variables. Since the findings of these studies were sometimes contradictory or inconclusive, meta-analyses could be helpful in summarizing and clarifying the inconsistent findings.

Both effect sizes (standardized mean differences) and significance levels of the studies are compared in a meta-analysis. Effect size is a quantitative estimate of the size of the effect of a specific independent variable, i.e., corporation size or industry, on the dependent variable, i.e., transfer pricing method chosen, for each study. The effect sizes are then accumulated and compared to determine whether the studies are significantly different (heterogeneous), or if differences were due to sampling error. Effect sizes can be calculated from the statistical results reported in each study, whether the reported results are means and standard deviations, *t*-statistics, ANOVA statistics, or correlations.[3]

If four studies yield significant results and four yield non-significant results on the effect of corporation size on the choice of an MNC's transfer pricing method, what conclusions can be drawn? If some studies yield significant results and others

insignificant results, are the differences between the two groups significant or are they artifactual? By comparing the significance levels generated by these eight independent studies, it can be determined if the findings of the studies are due to sampling error, or if they are significantly heterogeneous.

The meta-analytic procedures appropriate for three or more studies are comparing studies using diffuse and focused tests of significance and effect size, and combining studies for testing of significance and effect size estimation. Meta-analyses using diffuse tests reveal whether the studies "differ significantly among themselves with respect to significance levels or effect sizes, but...not how they differ or whether they differ according to any systematic basis" (Rosenthal, 1991, p. 60). If the diffuse tests are significant, then meta-analyses using focused tests are done comparing the significance levels and effect sizes of multiple studies to see "whether the studies differ significantly among themselves in a theoretically predictable or meaningful way" (p. 61).

Finally, meta-analyses combining studies are used "to estimate (an) overall level of significance and average size of the effect" (p. 61). The results of significance testing address the file-drawer problem and provide a fail-safe N. The fail-safe N provides an estimate of how many unpublished studies (possibly hidden in file drawers and therefore not included in the meta-analysis) with non-significant findings would have to be included in order to change the overall levels of significance arrived at in the diffuse and focused meta-analyses.

IDENTIFICATION OF STUDIES

The first step in a meta-analysis is to identify and retrieve relevant studies. Extensive manual and on-line searches of accounting, tax and business journals, references, ABI/Inform, bibliographies, and Dissertation Abstracts identified more than seventy articles, books, and dissertations on multinational transfer pricing written during the last twenty years.[4]

No attempt was made to eliminate studies based on some predetermined criteria, such as type of journal or status of publication (such as unpublished dissertations), using the methodology of Glass, McGaw and Smith (1981). It has been shown that the inclusion of all studies, regardless of methodological strength, does not affect the conclusions drawn from meta-analyses (Shapiro and Shapiro, 1982). The file-drawer problem is always an issue, because relevant studies with non-significant results are more likely not to be published and therefore hidden in file drawers and not be included in the analysis. The inclusion of unpublished dissertations in the analysis lessens the impact of this problem.

After eliminating non-empirical papers, empirical studies of non-U.S. MNCs, and laboratory studies, thirty-two empirical studies concerning transfer pricing and U.S.-based MNCs were identified. Of these studies, eleven were eliminated because they contained only anecdotal data or no data, or were restricted exclusively to tax implications or tax court cases. The remaining twenty-one relevant studies are presented in Table 1. The following section presents a brief summary of these studies in chronological order.

EMPIRICAL STUDIES—A NARRATIVE REVIEW

This section presents traditional narrative reviews of recent empirical transfer pricing studies. Table 1 and the narrative reviews in this section demonstrate the weaknesses

Table 1. Multinational Transfer Pricing Studies (1974-present)

Year	*Author*	*Source*	*Population*	*Sample*	*N*	*Type*	*Response Rate*
1977	Tang	Dissertation	Fortune 100	Controllers	85	Survey	48%
1979		Book					
1978	AA & Co.	Publication	U.S. companies	250 U.S. companies	100	Annual reports	N/A
1979	Mednick	Article					
1979	Kim & Miller	Article	World Trade Academy Press	Controllers	30	Survey	15%
1979	Persen & Lessig	Book	U.S. MNCs	Financial officers	125	Survey	31%
1979	Wu & Sharp	Article	Fortune 500	Controllers	61	Survey	12%
1979	Schiff	Article	Chemical industry	Specific companies	10	Annual reports	N/A
1980	Burns	Article	Fortune 500	Financial officers	62	Survey	54%
1980		Article					
1980	Benke & Edwards	Book	Specific companies	Controllers & staff	19	Interviews	N/A
1981	Yunker	Dissertation	Fortune 500	Controllers, financial VPs	52	Survey	15%
1982		Book					
1983		Article					
1983	Lecraw	Article	ASEAN members		52	Interviews	N/A
1985		Article					
1985	Benvignati	Article	U.S. FTC data	Lines of business	674	FTC data	N/A
1986	Hoshower & Mandel	Article	Forbes listing	Corporate treasurers	25	Survey	68%
1986	Salem	Dissertation	U.S. MNCs in Egypt	Financial executives	38	Survey	35%
1987	Al-Eryani	Dissertation	Fortune 1000	Controllers, treasurers, VPs	164	Survey	29%
1990	Al-Eryani et al.	Article					
1989	Carr	Dissertation	Fortune 100 + NEMA members	COOs, CFOs	7	Interviews	N/A
1991	Johnson & Kirsch	Article	Fortune 500 + BusWeek 1000		79	Survey	40%
1991	Chang	Dissertation	U.S. MNCs in Taiwan		38	Survey	51%
1991	BIC/Ernst & Young	Research report	BIMR subscribers + other MNCs	Financial/tax execs	96	Survey	N/A
1992	Borkowski	Article	Fortune 500 + BusWeek 1000	Intl VPs & controllers	79	Survey	48%
1992	Cravens	Dissertation	World Directory of MNEs + CD Disclosure	Intl VPs & controllers	82	Survey	15%
1992	Tang	Article	Fortune 500		90	Survey	27%
1993		Book					

of comparing studies via narrative techniques or non-statistical approaches. Although the twenty-one studies address the transfer pricing practices of U.S.-based MNCs, they vary widely in terms of size of sample (7 - 674), type of study (15 survey, 3 archival, 3 interview), response rate for survey studies (12% - 68%), and depth of statistical analysis (from the reporting of percentage data only to simple comparisons of means to detailed statistical analysis such as chi-squared and Kruskal-Wallace tests). These differences, combined with the non-reinforcing and/or contradictory findings of many studies, hinder the ability to draw conclusions regarding the effects of specific factors on transfer pricing choice.

While each study discussed transfer pricing method choice, there were no trends discernible in either findings or statistical approaches. Therefore, the narrative discussion is arbitrarily grouped by type of study in chronological order.

Survey Studies (15)

From his sample of 300 *Fortune 1,000* companies, Tang (1977, 1979) found 85 MNCs transferring goods internationally. He found no significant differences due to the size of the MNC when choosing a transfer price. Of twenty environmental variables, the most important were overall company profit, restrictions imposed by foreign countries on repatriation of profits or dividends, the competitive position of the subsidiaries in non-U.S. countries, and differentials in income tax rates and income tax legislation among countries. The objectives of transfer pricing were the determination of subsidiary performance and the maximization of consolidated after-tax profits of the MNC.

Kim and Miller (1979) combined a mail survey with selected interviews to report on 30 MNCs listed in the World Trade Academy Press. In choosing a transfer price, the most important factor was profit repatriation restrictions within the host country, followed by exchange controls and joint venture constraints within the host country.

Combining a survey and selected interviews with top financial officers, Persen and Lessig (1979) studied the transfer pricing practices of 125 MNCs as they related primarily to performance evaluation. Differences were found by size and by industry, with large firms and firms in chemical industries shunning cost-based methods.

Wu and Sharp (1979) surveyed 61 MNCs on the *Fortune 500* and found that the criteria for choosing transfer pricing methods differed by industry. In general, the primary criteria were compliance with non-U.S. tax and tariff regulations, maximization of the MNC's overall profit, and compliance with U.S. tax regulations and IRS rulings.

Burns (1980a, 1980b) surveyed 62 senior financial officers of *Fortune 500* MNCs about their transfer pricing decisions. She found that the following factors were most influential in those decisions: market conditions in the host country, competition in the host country, reasonable profit for the subsidiary, and U.S. federal income tax regulations.

Yunker (1982, 1983) surveyed controllers and financial vice presidents of 52 *Fortune 500* firms. Important environment factors included the overall market conditions and demand for the product, government regulations and restrictions, and economic conditions affecting material and labor costs. There was also a relationship between size and method, with larger firms tending toward market-based methods.

Hoshower and Mandel (1986) surveyed 25 large diversified companies, and found that the locus of transfer pricing decisions is at the divisional level for 80% of the respondents.

No relationship was found between transfer pricing method and size, with 40% reporting cost-based, 40% reporting market based, and 20% reporting negotiated methods.

Salem (1986) surveyed financial executives, controllers and executives for foreign operations of 38 U.S. MNCs with subsidiaries in Egypt. The major determinants of transfer pricing decisions were the competitive position of the Egyptian unit, maximization of overall corporate profit, and maintenance of a good U.S.-Egypt government relationship.

Al-Eryani (1987) and Al-Eryani, Alam and Akhter (1990) surveyed controllers, treasurers, financial vice presidents, and vice presidents for international operations from 164 *Fortune 1000* firms. Significant differences were found by size, with larger firms using market-based methods. Environmental determinants were maximization of overall corporate profit, compliance with U.S. and host country tax and customs regulations, and minimization of overall MNC income taxes.

Johnson and Kirsch (1991) surveyed management involved with transfer pricing from 79 MNCs listed on either the *Business Week Global 1000* or *Fortune 500*. International transfer pricing objectives were the minimization of corporate taxes, an increase in overall corporate profit, a method that was simple and easy to use, an increase in overall corporate sales, and the facilitation of managerial performance evaluation.

Chang (1991) surveyed 157 companies operating in Taiwan, of which 38 had U.S.-based parents. Transfer pricing objectives included providing information to managers, evaluating managerial efficiency, and choosing a simple, easy-to-apply method.

A joint study by the Business International Corporation (BIC) and Ernst & Young (1991) surveyed 96 executives and found that "transfer pricing policy is a complex function of the regulatory environment, organizational structure, corporate strategy, industry type, precedent, and a host of other political and economic factors" (pp. iii-iv). This broad finding supports the contingency theory that transfer prices are chosen by MNCs based on the factors that confront their operations and not on economic or accounting theory.

Borkowski (1992a) surveyed 79 controllers and vice presidents for international operations from MNCs listed on either the *Fortune 500* or *Business Week 1000*. She found that full cost methods are preferred by smaller firms, but found no significant relationships between method and industry. Transfer pricing decisions were influenced by tax rates and regulations, rates of customs duties, and the simplicity and ease of the method.

Cravens (1992) surveyed 82 vice presidents for international operations, controllers and financial officers of firms listed in the *World Directory of Multinational Enterprises* or non-randomly selected from CD Disclosure. The principal transfer pricing objectives were management of the overall tax burden, maintenance of competitive market position, and managerial motivation.

Tang (1992, 1993) replicated his earlier study with 90 controllers of *Fortune 500* firms and once again found no significant relationship between size and method chosen. Major environmental factors included overall company profit, differences in tax rates and regulations, and restrictions on repatriation of profits.

Archival Studies (3)

Arthur Andersen & Co. (1978) analyzed the 1977 annual reports of 250 MNCs for industry segmentation data and transfer pricing disclosures. The results were

summarized by Mednick (1979). Of the 100 companies with significant intersegment sales and/or transfers, the majority used market-based transfer prices.

In a narrow study of ten firms in the chemical industry, Schiff (1979) found that market price was the standard for eight of the MNCs, with the remaining two using a cost-based method.

Benvignati's (1985) study is somewhat different in that her sample consisted not of subsidiaries or companies, but lines of business, of which 674 reported foreign transfers. While no relationships were found between industry and method, larger MNCs were found to favor market pricing.

Interviews (3)

Benke and Edwards (1980) interviewed corporate controllers and staff from nineteen companies representing twelve industries. International transfer pricing objectives included minimization of taxes and import duties, avoidance of economic restrictions such as repatriation of profits, and management of currency fluctuations.

Lecraw (1985) interviewed top managers of non-randomly chosen MNCs with subsidiaries in five Asian countries. Of the 153 subsidiaries surveyed, 52 had a U.S.-based parent. Transfer pricing method choice was affected by the perceived market and economic risks in the host country, percentage of local ownership, and the tax rate of the host country relative to the U.S. tax rate.

Carr (1989) interviewed the chief operating and financial officers of MNCs either listed on the *Fortune Global 100* or which were members of the National Electrical Manufacturers Association: of the fifteen corporations participating, only seven were U.S.-based. Environmental variables of concern were currency fluctuations and the relative tax rates in the host countries.

ANALYSIS OF EMPIRICAL STUDIES

Tables 2 and 3 provide descriptive summaries of the twenty-one studies. As shown in Table 2, some studies reported transfer pricing methods by distinct categories (full cost, variable cost, market, negotiated, and other), while others lumped negotiated and market together as market-based methods. Response rates for survey studies, which comprised 15 of the 21 studies, ranged from 12% to 68%, with one study not reporting response rates. This wide range highlights the possibility of response bias and skewed results from studies with low response rates. Table 3 describes the most frequently studied factors, with the class of independent variables reported if mentioned in a minimum of three studies.

The most common class of variables studied was the impact of environmental factors on method choice, which was addressed by fifteen studies. All fifteen studies mentioned differences between the parent and subsidiary countries in their tax rates and regulations as an influence, but varied in how important an influence it was. A detailed analysis of the impact of environmental factors is difficult because each study assessed a differing number of factors. For example, Tang (1977, 1992) ranked twenty factors, while Burns (1980) ranked fourteen and Carr (1989) only five factors. The lack of statistical reporting across these studies ruled out a meta-analysis.

Table 2. Multinational Transfer Pricing Methods Used

	Full Cost	*Variable Cost*	*Total Cost-Based*	*Market*	*Negotiated*	*Total Mkt-Based*	*Total Other*
Tang	44%	3%	47%	39%	14%	53%	0%
AA & Co. Mednick			25%*	75%		75%	0%
Kim & Miller	No data available						
Persen & Lessig	32%	5%	37%	33%	22%	55%	8%
Wu & Sharp	2,5	7,8		1,4	3		6,9**
	1,3	5,6			2		4,7[a]
Schiff			20%			80%	0%[b]
Burns	Given Sec. 482		37%	43%	15%[c]	58%	5%
	If no Sec. 482		47%	31%	22%[c]	53%	0%
Benke & Edwards			39%	44%	17%	61%	0%
Yunker	39%	0%	39%	34%	17%	51%	10%
Lecraw			57%			43%	0%
Benvignati			72%	24%		24%	4%
Hoshower & Mandel			40%	40%	20%	60%	0%
Salem	No data available						
Al-Eryani	41%	8%	49%	35%	15%	50%	1%
Carr			57%	43%		43%	0%
Johnson & Kirsch			31%	38%	23%	61%	8%
Chang	Market, then cost, linear programming, negotiated, other						
BIC/E&Y	23%	3%	26%	51%	8%	59%	5%[d]
Borkowski	52%	0%	52%	33%	15%	48%	0%
Cravens			42%	33%	18%	51%	7%
Tang	38%	3%	41%	46%	13%	59%	0%

Notes: * Includes cost, cost-plus, market less discount and negotiated prices.
** Ranking of nine methods if market price is available.
a. Ranking of seven methods if no market price is available.
b. Restricted to chemical industry.
c. Resale price.
d. Includes rate of return and functional analysis.

Table 3. Counts of Measures Affecting Transfer Pricing Method Research

Independent Variables	*Number of Studies*
Environmental factors	**15**
Differences in tax rates and regulations	15
Rate of customs duties	13
Restrictions on repatriation of income	11
Competitive position of subsidiary	10
Import restrictions	8
Overall profit to MNC	6
Currency revaluations	6
Performance evaluation of subsidiary	6
Maintain cash flowss	5
Reasonable profit for subsidiary	5
Relations with host country	4
Maintain subsidiary autonomy	3
Economic/market conditions in host country	3
Rules for subsidiary financial reporting	3
Simplicity/ease/cost of application	3
Joint venture/local ownership constraints	3
Royalty restrictions	3
Other factors mentioned in only one or two studies	
Objectives of transfer pricing method	**7**
Evaluate subsidiary performance	7
Maximize after-tax profits	6
Minimize tax and customs payments	5
Maximize sales volume	4
Simplicity/ease of application	4
Other objectives mentioned in only one or two studies	
Size	**8**
Small/Medium (less than $1,000 million in sales)	38% of respondents
Large (greater than $1,000 million in sales)	62% of respondents
Level at which transfer pricing method is chosen	**7**
Division manager or Division manager and upper management	61% of respondents
Upper management	39% of respondents
Industry	**4**

Seven studies considered the objectives of transfer pricing methods. The evaluation of subsidiary performance was mentioned in all seven studies, while the maximization of after-tax profits was mentioned in six. As with environmental factors, the lack of uniformity across studies regarding number and type of objectives ranked, and the lack of statistical reporting made a meta-analysis moot.

The level at which the transfer pricing method is chosen was reported in seven studies. The method is chosen at the upper management level by 39% of the respondents in those seven studies, with responses ranging from 20% to 64%. Responses for the method set by input from both the division manager and upper management, or solely at the division level, averaged 61%, with a range from 36% to 80%. Again, due to the lack of statistical reporting, no further analysis.

The only two independent variables consistently reported statistically were MNC size and industry, which were addressed in eight and four studies respectively. However, the findings of these studies conflict regarding the strength of the relationship between pricing method, size and industry.

Table 4. Studies in Meta-Analysis of Size and Industry Variables

Year	*Author*	*N*	*Significant?*	*Findings*
Studies in meta-analysis of size/method choice relationship				
1977	Tang	85	No	No relation between size and cost-based methods
1979	Persen & Lessig	94	Yes	Large firms do not use cost plus methods
1981	Yunker	52	Yes	Large firms tend to use market-based methods
1985	Benvignati	674	Yes	Large firms tend to use cost-based methods
1985	Hoshower & Mandel	25	No	Large firms split between market and cost-based, with another 20% using negotiated methods
1987	Al-Eryani	164	Yes	Larger firms tend to use market-based prices
1992	Borkowski	79	No	Full-cost method firms are smaller
1992	Tang	90	No	Larger firms tend to use non-cost based methods.
Studies in meta-analysis of industry/method choice relationship				
1979	Persen & Lessig	94	Yes	Chemical industry uses market rather than cost-based methods; same is true to lesser extent for metals and office equipment industries.
1979	Wu & Sharp	61	Yes	If market price is available, is not used by office equipment and appliance industries.
1985	Benvignati	674	No	No significant relationship
1992	Borkowski	79	No	No significant relationship

An attempt to meta-analyze the findings on environmental factors, transfer pricing method objectives, and level at which method is chosen uncovered the limitations of the research with respect to the meta-analysis methodology. While most of the studies drew their samples from variations on the same population, as shown in Table 1, few of the studies reported their findings statistically. Many studies reported raw counts or percentages of responses, did not analyze the data statistically, or chose not to report those analyses. An attempt to get this information from the authors of several studies generally yielded one of two responses: either the data were never statistically analyzed, or, if they were, the results were discarded and are no longer available.

The only variables reported consistently with statistics were size and industry. However, these factors were only considered in a limited number of studies. As previously mentioned, findings about the significance of these variables were contradictory (see Table 4). Of the eight size studies, four were significant, but findings were contradictory. Of the four industry studies, two were significant. A meta-analysis of these studies would summarize these findings into an overall measure of statistical significance, taking into account size effects. The results should be a truer picture of the relationship between transfer pricing method and size, and method and industry.

In the meta-analyses of the eight studies addressing the relationship of corporation size and choice of a transfer pricing method, the findings are as follows: When comparing effect sizes, results of the diffuse test show that the effect sizes are not significantly different. This infers that the effect sizes of the studies are reasonably consistent with each other, and do not appear to be significantly heterogeneous. The focused test measuring the magnitude of effects shows that there was no significant tendency for the effect sizes to increase with later studies. When comparing significance levels, the levels generated by the eight studies are not significantly different in the diffuse test. This suggests that the significance levels are not significantly heterogeneous,

meaning that the differences between significant and non-significant studies are nonsignificant. Comparing studies in the focused test shows that the significance levels do not appear to change with more recent studies, i.e., there are no significant trends in the reported significance levels.

A meta-analysis combining significance levels indicates that the combined results of these eight studies are unlikely to have occurred by chance. The fail-safe number is 37, which is the additional number of studies finding no relationship between size and method choice which would be needed to bring the probability level to .05, and render any significant meta-analyses insignificant. Finally, a meta-analysis combining effect sizes yielded a mean standardized difference between means of $d = .2422$, meaning the combined effect size is small in magnitude.

The interpretation of these meta-analyses is that, regardless of individual contradictory or non-supporting results, the eight studies taken as a group are not significantly different regarding size. The conclusions may be drawn that corporation size is positively related to choosing market-based transfer pricing methods.

The results of the meta-analyses of the four studies comparing industry and method choice mirrored those of the size analyses, and were all insignificant. The fail-safe number was 6, and the mean standardized difference was $d = .1288$. Since the findings of the individual studies provided no clear indication of the industry/transfer pricing method relationship, the meta-analyses can be interpreted as inconclusive regarding industry.

CONCLUSIONS AND IMPLICATIONS

The interest in understanding transfer pricing method choice and the factors affecting it continues to be an important area of research. However, the findings of recent empirical studies have not clarified the relationships of specific environmental and organizational factors and method choice. A traditional literature review of twenty-one empirical studies was presented to highlight the similarities, and more importantly, the differences, in these studies, and the limitations of such narrative analysis for comparison and integration of results.

Given the large number of empirical transfer pricing studies, meta-analytic procedures seemed appropriate for an integrative and stringent assessment of the studies' results. An attempt at meta-analyzing the results of these empirical studies can charitably be described as only marginally successful, at best. While many similar transfer pricing studies have been done, few are consistent in reporting findings in terms of variables studied, statistical tests used, and data reported. Only two factors (size and industry) were reported with enough statistical data for meta-analysis. The meta-analyses supported the large corporation/market-based method relationship, and were inconclusive regarding industry.

Given the lack of consistency in factors studied and statistical testing and/or reporting, it is doubtful that any statistical methodology can be applied to the body of existing transfer pricing research. A caveat must be issued with the suggestion that more research must be done in the area of multinational transfer pricing method choice. Future research must be more focused in terms of the critical factors affecting transfer pricing method choice. Any new research must also include a rigorous statistical analysis of the findings, so that similar studies' findings can be compared and integrated so any

relationships between method choice and specific factors can be more strongly supported or dismissed.

Transfer pricing research should also be examined to address financial as well as environmental and organizational factors. While some studies (Harris, Morck, Slemrod and Young, 1993; Klassen, Land and Wolfson, 1993) have addressed specific financial variables when addressing income shifting via various mechanisms which include transfer pricing, few if any studies have looked at the effect of both financial and non-financial factors on MNC transfer pricing choice.

Survey research is an excellent method of assessing the transfer pricing practices of MNCs when undertaken accordingly to stringent guidelines, and given a sufficient response rate to insure minimal response bias. What is a sufficient response rate, and how does one achieve it? Given the studies analyzed here, there seems to be no agreement on an acceptable response rate. Of the fifteen survey studies, thirteen were published with response rates ranging from 12% to 68%, with one study not reporting the rate. While surveys are the most practical tool for gathering some data on environmental and organizational factors, they should be supplemented by additional archival data such as financial ratios and effective tax rates. This combination of data will allow for a more thorough understanding of what influences transfer pricing choice. It is naive to believe that non-financial factors can continue to be analyzed without considering the effects of financial factors such as income shifting and tax rate differentials on transfer pricing method choice.

NOTES

1. Leitch and Barrett (1992) provide a detailed discussion of multinational transfer pricing methods, objectives and constraints.
2. See Leitch and Barrett (1992) and Borkowski (1992b, 1993) for summaries of the regulatory constraints imposed in the United States by the IRS, FASB, and the SEC.
3. See Rosenthal (1991) and Hunter, Schmidt and Jackson (1982) for a detailed discussion of effect size statistics and their derivation. They also provide an in-depth discussion of meta-analysis and the specific meta-analytic procedures used in this study.
4. See Tang (1979, 1993), Eccles (1985), Grabski (1985), and Leitch and Barrett (1992) for a review of research prior to 1970 and/or theoretical, domestic, or model-building research.

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A Methodological Note on Cross-Cultural Accounting Ethics Research

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Key Words: Research Design; Cross-Cultural; Methodology; Hofstede; Ethics; Behavioral

Abstract: *Predicting international differences in ethical behavior is important for multinational accounting firms. This note reports an empirical test of the usefulness of Hofstede's five dimensions of culture to predict cross-cultural differences in ethical sensitivity. A small-sample survey of academic experts in cross-cultural management research in accounting and other business disciplines demonstrated that Power Distance and Confucian Dynamism were expected to be consistently related to ethical judgment in a series of eight accounting-related ethical vignettes, while Individualism showed strong effects, its direction depended on the nature of the ethical dilemma described in the vignette. Over all of the experts, there was statistically significant consensus. Implications of the findings for the research design of cross-cultural accounting ethics studies is also discussed.*

In the case of international studies, cross-cultural differences in attitudes and beliefs are invariably of interest. Identification of these differences is important as a practical matter for managers of international firms. Differences in beliefs as to what constitutes ethical behavior affect attitudes towards unethical behavior, and could, if translated into managerial action, create problems (for American managers, compliance with the Foreign Corrupt Practices Act, for example). A systematic understanding of cross-cultural differences could provide guidelines for managers seeking to implement their firms' code of conduct internationally (Cohen, Pant and Sharp, 1992; 1993), and even indicate the extent to which a formal code is an effective means by which managerial decisions can be guided by a moral framework (Vogel, 1992; Langlois and Schlegelmilch, 1990).

Since ethical values are part of culture (Hofstede, 1991), this paper explores whether Hofstede's five well-known measures of culture can be used to predict ethical sensitivity, defined as the evaluation of, or belief concerning, the morality of a particular action. Specifically, in this note, results are reported of small-sample survey of experts on national culture to demonstrate that these measures of culture can be used to develop

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directional hypotheses concerning cross-cultural differences in ethical perceptions. This is followed by a discussion of the consequences of the findings for the design of cross-cultural accounting vignette-based studies.

USING CULTURE MEASURES TO PREDICT ETHICAL REASONING

A systematic prediction of cross-cultural differences in ethical sensitivity requires a theory of cross-cultural value differences. Enormous progress has been made in this respect since Child (1981) wrote that "the employment of the culture concept has been an excuse for intellectual laziness, whereby "culture" has often served simply as a synonym for "nation" without any further theoretical grounding. In effect, national differences found in characteristics of organizations or their members have been ascribed to ... national differences, period." While this perhaps understates the contribution of early cross-cultural research, notably Kluckhohn and Strodtbeck (1961), the need Child identified was addressed in the seminal work of Hofstede (1980) who first identified and measured four dimensions of national culture on a large scale. (More recently, Maznevski, Nason and DiStefano, 1993 have tested a 14-component measure based on Kluckhohn and Strodtbeck's interview protocol; Hampden-Turner and Trompenaars, 1993 have proposed a 7-dimension framework.) If any of these measures are useful for predicting the magnitude of differences in ethical sensitivity, they can be used in research designs to improve sample selection. One important design problem in any cross-cultural research is statistical power, that is, the ability to identify correctly a cross-cultural difference where one exists, and to fail correctly to find one where one does not exist, within a cost-effective sample size. All other things equal, if a theory predicts a larger difference in ethical sensitivity between countries A and B than between C and D, then the same power can be achieved with a smaller sample size from A and B than from C and D. Thus for theory testing purposes, a higher power can be achieved by sampling from countries whose difference is expected to be large.[1] This methodological note considers how to use Hofstede's measures of culture to identify countries with the greatest differences in ethical sensitivities.

Hofstede (1980) defined culture as "the collective programming of the mind which distinguishes the members of one human group from another" (p. 19). He argues that values, that is, broad tendencies to prefer certain states over others, lie at the core of culture differences, and include differences in feelings of evil vs. good, (1991, p. 8). In his 1980 study and the subsequent replication which attempted to remove the western cultural bias of the original research design (Hofstede and Bond, 1988), five dimensions of culture were identified, and measured in up to fifty countries.[2] These five dimensions are: (1) *Power Distance* (the extent to which power is unequally shared in a society), (2) *Uncertainty Avoidance* (the collective need in a culture for security and the general level of anxiety created by the uncertainties of life, (3) *Individualism/Collectivism* (the relationship of an individual to his or her group, and the relative importance in the culture of the individual relative to his or her group membership), (4) *Masculinity/Femininity* (the extent to which a culture values assertive "masculine" rather than supportive, nurturing "feminine" values), and (5) *Confucian Dynamism* (the extent to which a culture is long-term or short-term oriented). The five constructs are considerably more complex than the very brief descriptions provided here. For a more complete, authoritative description of all five dimensions, see Hofstede (1991).

A SMALL-SAMPLE SURVEY

Hofstede's (1991) five dimensions of culture were used to explore the relationship between culture and the evaluation of possibly questionable actions in eight vignettes (See Appendix A for a description of the vignettes). Since culture is a very complex construct, and the five dimensions identified by Hofstede are far from *complete* descriptions of cultural differences, it is useful to explore whether each of the five culture dimensions has predictive power vis-à-vis ethical choices.

Eight vignettes were adapted from prior ethics research (Claypool, Fetyko and Pearson, 1990; Armstrong, 1985; Loeb, 1971) and through a pretest with 22 practicing auditors from the United States and Europe, who were asked in a mail survey to list ethical situations and dilemmas that could arise in the course of auditing clients or in the work environment of the public accounting profession. The vignettes were then distributed to 11 auditors of another large multinational audit firm, who were asked to evaluate their realism and plausibility and to provide open-ended input on how they might be improved. The eight vignettes, while capturing ethical dilemmas pertinent to current audit practice (to enhance content validity), were devised also to reflect cultural differences and various modes of moral reasoning. For example, the second vignette describes an action in which an accounting firm breaches the professional code of conduct by disclosing to a client information of the impending bankruptcy of another client who owes the first client a considerable sum of money. A collectivist culture might view this action in terms of loyalty and concern for the client which would otherwise be seriously harmed by the bankruptcy. Accountants from a collectivist culture might moderate their view of the morality of this action, compared to those of an individualist culture. Likewise, the dilemma carries overtones of uncertainty avoidance, in that a rule-oriented high uncertainty avoidance culture might define "ethical" solely by whether or not the action is proscribed in a code of conduct. At the same time, a respondent using teleological reasoning could argue that the firm's (and the healthy client's) best interest is served by advising of the unavoidable impending bankruptcy, even though it breaches the code of professional conduct.

A small sample of academic experts on international culture was surveyed concerning their views on the existence of a relationship between culture dimensions and the ethical evaluation of each of the eight vignettes. Experts were necessary for this purpose because it was essential that the respondents be intimately familiar with the complexity of the five culture dimensions. A survey of the cross-cultural management and international accounting literature identified fourteen academics (eight accountants and six non-accountants, three U.S. and 11 non-U.S.) who were active in international cross-cultural research using Hofstede's framework. All are well-known, highly published researchers. Each was personally contacted to take part in the study. One instrument was returned unanswered due to subsequent lack of time, leaving 13 possible respondents. We received responses from 11 experts representing an effective response rate of 85%. The respondents' functional areas included marketing and organizational behavior; six were known to have an accounting background.

To ensure that as far as possible each expert was completely familiar with the meaning of the five dimensions, each was provided with a description of them taken directly from Hofstede (1991). They were asked to review each of the eight vignettes and to state their expectation of the direction of the relationship if any between each of the five cultural dimensions and the morality of the action. (Note that this requires each

expert to apply his/her own definition of "morality"). For example, in Vignette 1, the action states "The partner in charge of the engagement accepts the client's interpretation of the receivables". The expert was asked to respond to the following question: "I would expect a Masculine culture to view this action as more ethical/about the same/less ethical/I don't know, than a Feminine culture." This was repeated for each of the five cultural variables. Thus, in total, 40 possible expected relationships (five for each of the eight vignettes) were elicited from each subject. "More ethical" was coded as 3, "About the same" as 2, and "Less ethical" as 1. "I don't know" and blank responses were both coded as missing values.

Siegal and Castellan (1988, p. 267) state that Kendall's coefficient of concordance is an appropriate measure of consensus that "determines the degree of agreement among the raters in their judgments." Over all 11 subjects, Kendall's $W = .119$ ($p < .01$), and the overall mean pairwise rank correlation was 0.28 ($p < .01$). Table 1 shows the pairwise Spearman rank correlations between each respondent for the 40 responses. Twenty-four of the 55 correlations were significant at the 5% level, and two more at the 10% level. Given the extreme cultural diversity of the sample, there was a moderate degree of consensus among experts.[3] The means of each expert's correlations ranged from 0.06 to 0.37, indicating that the judgments of some experts differed from the group as a whole more than others.

In reviewing the results in more detail, two questions are examined. The first is whether, in the view of the experts, there is a relationship between culture dimensions and ethical evaluations. The percentage of respondents who indicated a relationship (whether positive or negative) provides a measure of this. Overall, of the forty possible responses from each of 11 experts (440 possible relationships), 28 (6%) were "no opinion," 134 (30%) were "no expected relationship" and the remaining 278 (63%) indicated an expectation of a relationship. This surprisingly high percentage suggests that the experts individually believed that Hofstede's culture dimensions can indeed provide insights into differences in ethical judgments. Of the five dimensions, Confucian Dynamism elicited the highest percentage (70%) of expected relationships, while Power Distance showed the lowest (52%). The Confucian Dynamism result is not surprising, given that all of the vignettes were directly related to accounting practice, and that compromising long-term interests for current results is a perennial concern for both accounting and business ethics generally.

The second question is whether there is agreement on the direction of this relationship. This is first tested by examining the total responses for each culture dimension across all eight vignettes taken together.

Table 2 shows the number and percentage of experts receiving each type (positive, negative or none) of relationship. A positive relationship is defined as one where a higher score on the culture dimension is associated with an evaluation that an action was more ethical. Specifically, positive relationships were those where respondents believed that a masculine, high power distance, strong uncertainty avoidance, individualist, or long-term oriented culture would view an action as ethical. Since 11 experts expressed opinions about eight vignettes, the maximum possible in each row is 88, and perfect agreement on both the existence and direction of a relationship would be indicated by 88 - 0 - 0 or 0 - 0 - 88 row scores. Table 2 shows that there is least disagreement among the experts on the Power Distance and Confucian Dynamism dimensions. Overall, experts felt that short-term oriented, high power distance cultures would evaluate all eight actions as more ethical, but that there is disagreement about the

Table 1. Pairwise Correlations between Experts
(AEXP 1-6 were Accounting Faculty, NEXP 7-11 were Non-accounting faculty)

	Accounting						*Non-Accounting*				
Expert	*AEX1*	*AEX2*	*AEX3*	*AEX4*	*AEX5*	*AEX6*	*NEX7*	*NEX8*	*NEX9*	*NEX10*	*NEX11*
AEXP1											
AEXP2	.324**										
AEXP3	.724*	.421*									
AEXP4	.406*	.096	.328*								
AEXP5	-.051*	-.170	.101	.369*							
AEXP6	-.249	-0.11	.050	.069	-.204						
NEXP7	.639*	.238	.556*	.466*	.203	.076					
NEXP8	.326*	-.070	.424*	.154*	.187	.357*	-.042				
NEXP9	.514*	.349*	.553*	.353*	-.044	.172	.449*	.210			
NEXP10	.339*	.073	.371*	.401*	.259	.134	.218	.243	.351*		
NEXP11	.415*	.335**	.352*	.260	-.101	.197	.406*	.079	.361*	.259	

Notes: * Significant at .05
** Significant at .10

Table 2. Expected Relationship Between Culture Dimension and Ethical Evaluation

Culture Dimension	*Expected Positive Relationship*	*Expected No Relationship*	*Expected Negative Relationship*	*Don't Know*
Masculinity	34(39%)	28(32%)	21(24%)	5(5%)
Power Distance	43(49%)	37(42%)	3(3%)	5(5%)
Uncertainty Avoidance	19(22%)	27(31%)	33(38%)	9(10%)
Individualism	27(31%)	25(28%)	32(36%)	4(5%)
Confucian Dynamism	52(59%)	17(19%)	10(11%)	9(10%)
Total	175(40%)	134(30%)	99(23%)	32(7%)

direction of a relationship between ethical sensitivity and Masculinity, Uncertainty Avoidance, and Individualism. Note that even though Power Distance was believed to be least relevant to ethical evaluations, on the occasions when it was believed to be relevant, there was very little disagreement over the direction of its relationship.

Because the ethical construct is multidimensional, it is possible that a statement of the type "high power distance cultures are less ethical than low power distance cultures" is an over-simplification. Rather, the five culture dimensions may only be usable for predicting cross-national differences in ethical sensitivity *for a given ethical dilemma, or in a particular professional context.* Thus it might be possible that one questionable action would be considered less ethical in Japan than in the United States, while another would be considered less ethical in the United States than Japan. To test whether the expected relationships between culture dimensions and ethical sensitivity were specific to each vignette, Table 3 disaggregates Table 2 by vignette. Thus, an "11-0-0" and "0-0-11" cell indicates perfect consensus on the existence of a relationship and its direction, while 0-11-0 indicates perfect consensus that no relationship exists.

The relevance to cross-cultural ethics research of each vignette may be estimated by the percentage of respondents who felt that there was a relationship between a culture dimension and the ethical evaluation of that vignette. In Vignette 3 (conflict of interest), 27 of the 55 responses (52%) were "no relationship" response. In the other seven vignettes, the percentage of "no relationship" responses was between 24-31%, suggesting that in general, Hofstede's culture dimensions were believed by the expert panel to be useful predictors of ethical reasoning.

Several fairly strong vignette-specific relationships emerged. In particular, the apparent lack of consensus for Individualism in Table 2 arises not because there was no agreement on the direction of a relationship, but because the direction differed across vignettes; negative relationships in Vignettes 1 (collectability of receivables) and 3 (conflict of interest), and positive relationships in Vignettes 4, (bidding for a risky client), 5 (lying about lowballing), and 8 (underperforming the audit).

These results suggest that there was general agreement among the experts that differences between countries along the Power Distance and Confucian Dynamism dimensions are systematically associated with differences in moral judgments in the accounting profession, and that differences along the Individualism dimension are also important, but situation-specific.

Table 3. Expert Consensus by Culture Dimension

	Masculinity			*High Power Distance*			*High Uncertainty Avoidance*			*Individualism*			*Confucian Dynamism*		
	+	*None*	–	+	*None*	–	+	*None*	–	+	*None*	–	+	*None*	–
1) Collectability of Receivables	4	4	3	7	4	0	3	2	5	2	3	6	2	1	7
2) Confidentiality	5	3	1	6	4	0	6	2	3	4	6	1	2	2	7
3) Conflict of Interest	1	5	5	3	7	0	1	4	5	1	3	7	1	8	2
4) Bidding for a Risky Client	8	2	1	7	4	0	1	5	4	8	3	0	0	1	10
5) Lowballing	7	3	1	3	7	1	2	3	6	7	3	1	0	1	9
6) Favors for a Client	4	2	4	8	1	1	2	6	2	2	1	7	2	3	3
7) Underreporting Billable	2	5	4	5	5	1	3	4	3	3	3	5	3	0	7
8) Underperforming the Audit	3	4	2	4	5	0	1	1	5	5	3	0	0	1	7

Note: Each cell shows the number of experts who expected a relationship between ethical evaluation and culture score in the direction indicated. The greater the net total score at the foot of each column differs from zero, the stronger the overall experts' beliefs that a relationship existed between a culture dimension and ethical sensitivity. A score listed under the positive column (the + column) indicates that, in general, countries from that end of the continuum of the cultural dimension would view the action as more ethical (e.g., Masculine, High Power Distance and Individualism) while a negative number indicates countries from that end of the continuum of a cultural dimension would view the action as less ethical (e.g., High Uncertainty Avoidance and High Confucian Dynamism).

IMPLICATIONS AND CONCLUSIONS

This note has shown that Hofstede's five measures of national culture are useful for designing studies which investigate cross-national differences in ethical sensitivity. Using a small sample of international culture experts, and a series of accounting-related vignettes, evidence was found of a systematic relationship between ethical sensitivity and the Power Distance and Confucian Dynamism dimensions for accounting-related ethical issues, and a situation-specific relationship for the Individualism dimension.

Our results have several implications for cross-cultural accounting ethics research. First, several guidelines are provided for instrument design. A vignette is likely to be useful to cross-cultural researchers if: (1) it identifies cross-culturally relevant issues, (meaning that experts believed that different cultures would evaluate the morality of the actions differently) and (2) it is reliable (the experts agreed on the direction of the relationship). Vignettes 5 (lying about lowballing) and 6 (favors for a client) had the highest relevance to cross-cultural studies (four of the five culture dimensions had two or fewer 'no relationship' responses), and Vignettes 1 (collectability of receivables), 2 (confidentiality), 4 (bidding for a risky client) and 8 (underperforming the audit) had two or fewer 'no relationship' responses on three of the five dimensions. At the other extreme, Vignette 7 (underreporting billable hours) was relevant only for Individualism and Confucian Dynamism, and Vignette 3 (conflict of interest) only for Individualism. Turning to agreement among the experts over the direction of the relationships in each vignette, Vignette 4 (bidding for a risky client) elicited the least disagreement (one expert disagreed with the majority opinion on Masculinity, and one on Uncertainty Avoidance) and in vignette 8 (underperforming the audit), one expert disagreed on the Uncertainty Avoidance dimension, and two experts disagreed with the majority on Masculinity. In Vignette 3, there was only a single disagreement on each dimension except Power Distance. Taking both criteria together, Vignettes 4 (bidding for a risky client) and 8 (underperforming the audit) provide good overall relevance and reliability. However, these results suggest that the choice of vignette should be made in the light of the specific cultural dimension(s) of interest. For researchers testing relationships between ethical reasoning and Power Distance, Vignette 6 (favors for a client) is the most suitable, and for Uncertainty Avoidance, Vignette 8 (underperforming the audit). Similarly, for Masculinity, Vignettes 2 (confidentiality), 4 (bidding for a risky client), or 5 (lying about lowballing) are suitable, for Individualism, Vignettes 3 (conflict of interest), 4 (bidding for a risky client), 5 (lying about lowballing) or 8 (underperforming the audit), and for Confucian Dynamism, 4 (bidding for a risky client) 5 (lying about lowballing) or 8 (underperforming the audit).

The results also provide guidelines for sample selection. Empirical testing for cross-cultural differences in ethical sensitivity in an accounting context should not be conducted on the basis of random choice of convenient countries. Rather, if countries which are short-term oriented and have large power distance are paired with long-term oriented, low power distance cultures, smaller sample sizes should be required to identify statistically significant differences in ethical sensitivity. For example, Malaysia or Indonesia could be paired with Japan. A research design using countries that differ on Power Distance and Confucian Dynamism, (the two strongest dimensions to emerge in this study) might include countries in four categories: high Power Distance/Long Term Orientation scoring countries (e.g., India, Hong Kong and Thailand), low Power Distance/Long Term Orientation (e.g., the Netherlands), high Power Distance/Short Term Orientation (the Philipines) and low Power Distance/Short Term Orientation

(e.g., Canada and Great Britain). Results of such country studies would be a valuable addition to an emerging body of accounting ethics work including data from France, Norway, and the U.S. (Schultz, Johnson, Morris and Drynes, 1993), Nigeria and the U.S. (Tsalikis and Nwachukwu, 1991), and Japan, Latin America, and the U.S. (Cohen, Pant, and Sharp, 1995). The results of this study also suggest the need for a more systematic understanding of ethical issues (e.g., which issues are most likely found in an international auditing setting). The consensus on the aggressive bidding Vignette 4 implies these Western-oriented experts perceive an effect of culture on this issue. However, approximately one third of the experts had no opinion of the relationship of culture to the serious breach of duty in underperforming the audit. It is likely that much of the firm's client generation activity is done at headquarters while the audit performance tasks occur at the local operating level. Therefore, a better understanding of the relevance of the ethical issues being investigated will influence the utility of international ethics research. In general, the use of vignettes in international research can benefit from more careful attention. For example, to the extent that the relationship between individualism and masculinity and ethical sensitivity are strong but situation-specific, further research is needed to explore what aspect of content of the vignettes taps the individualism and masculinity dimensions. This could be done by careful design of vignettes to tap into specific culture dimensions.

The results are subject to a number of limitations. First, the small sample used in the study perhaps limits its generalizability, even though each respondent was an expert in his/her field. Second, the vignettes were only in auditing and were developed from a western cultural perspective. A future study could examine the usefulness of Hofstede's cultural dimensions in different accounting settings (e.g., managerial, tax) with vignettes developed from a multicultural perspective. Third, the measures of consensus were limited by the absence of a definition of morality. Since the ethical construct is multidimensional, a multidimensional approach might provide greater construct reliability (Flory, Philips, Reidenbach and Robin, 1992). Finally, environmental and legal variables may affect ethical decision making (Wines and Napier, 1992). Future studies will need to control for these variables when investigating the effect of culture on international decision making.

Despite the limitations, the results suggest several avenues for future research. First, the generalizability of the relationships between the cultural dimensions and ethical evaluations should be tested in several countries, with other vignettes, and in professional contexts outside accounting. Biases in ethnocentrically developed theories would be revealed in non-Anglo/American settings. Second, hypotheses should explore the relationship between each culture dimension and ethical behavior. Choosing countries which differ on only one dimension, or choosing a set of countries designed to isolate characteristics and their interactions will aid researchers in developing and testing theory underpinning the relationship between culture and ethics. Finally, future research in international accounting ethics can benefit from linkage with other empirical ethics research streams. In particular, the relationship between culture and moral development could provide valuable insights into the cross-cultural generalizability of models of moral development.

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APPENDIX A: VIGNETTE DESCRIPTIONS

Vignette #1. Collectability of Receivables

An audit client who also receives considerable management advisory services (MAS) billings has a difference of opinion with the auditor as to when to recognize certain revenue transactions in which there is some uncertainty regarding the collectability of the receivables. Recently the client has been approached by a competitor soliciting auditing and MAS services. The firm has been a client for 20 years but has recently had a change in management.

Action: The partner in charge of the engagement accepts the client's interpretation of the receivables.

Vignette #2. Confidentiality

CPA Z serves as the auditor for Widget & Co., a privately held firm. Widget's market share has declined drastically, and Z knows that Widget will soon be bankrupt. Another of Z's audit clients is Solid Company. While auditing Solid's accounts receivable, Z finds that Widget & Co. owes Solid $200,000. This represents 10 percent of Solid's receivables.

Action: CPA Z warns the client, Solid Company, about Widget's impending bankruptcy.

Vignette #3. Conflict of Interest

CPA Z, in addition to practicing public accounting, is heavily involved in community activities. Z is especially well known for the passionate promotion of the local symphony orchestra. In preparation for a proposal to an international funding organization, the president of the symphony has asked Z to perform the initial audit.

Action: CPA Z accepts the audit engagement.

Vignette #4. Bidding for a Risky Client

The largest client of a competitor appears to be unhappy with its auditors. Upon investigation, a partner finds that the client's management puts a heavy emphasis on having an upward trend in reported earnings. The compensation of top executives is based in large part on the earnings figure and top management takes an aggressive approach to recognizing earnings.

Action: The partner recommends bidding for this client. This will make the partner the leading revenue generator in the firm.

Vignette #5. Lying about Lowballing

A partner is developing a bid for a new client. The partner deliberately sets the bid significantly below cost. The partner knows that the audit will lose money in the first few years. However, the expectation is that the firm will be able to raise the audit fee a few years down the road to generate a profit.

Action: In response to a question from the prospective client, the partner indicates that fees should not be expected to rise significantly in the foreseeable future.

Vignette #6. Favors for a Client

A partner has had several meetings with a potential client. The potential client's owner asks the partner to set up an interview for his son as a staff auditor in another office

of the firm. Although the son is bright, it is unclear whether he would have otherwise been given an offer.

Action: The partner recommends making the potential client's son an offer.

Vignette #7. Underreporting Billable Hours

A public accounting firm has recently acquired a new client with a very low bid. The partner suggests the audit hour budget for inventory-related items will be 100 hours. The senior's experience with similar clients suggests that in order to have reasonable assurances of no material errors or irregularities, the audit will take a minimum of 150 hours. Performance evaluation is based in part on efficiency.

Action: The senior accepts the budget as is. The senior's plan is to do all necessary work to provide reasonable assurance but to underreport actual hours worked.

Vignette #8. Underperforming the Audit

Vignette is the same as #7.

Action: The senior accepts the budget as is. Subsequently, in cases where judgment is required to determine the number of audit procedures, the senior performs fewer procedures.

NOTES

1. For the more pragmatic purpose of identifying the difference between two given countries of interest, the design simply becomes the classic one of first deciding the smallest cross-national difference one needs to identify, and then, having estimated the variance of the variables of interest, calculating the sample size necessary to detect the difference of the required size at the desired confidence level.
2. However, these culture differences do not purport to be *complete* descriptors of ethical differences. Our intention here is to explore the *extent to which* these culture measures can be used to predict differences in ethical sensitivity. After all, Hofstede's dimensions are the only cross-cultural variables which have been carefully validated, and for which measures are readily available for over fifty countries.
3. We did not provide a definition of "ethical" in the survey. Since it is well known that there are significant individual differences in ethical reasoning (Kohlberg, 1976), the definition of "ethical" is likely to differ among experts, reducing the level of consensus.

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The Development of Accounting Regulation in the Extractive Industries: An International Review

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Key Words: Accounting harmonization, Accounting regulation, Extractive industry accounting, International accounting

Abstract: *In view of the economic significance of extractive industries, the special accounting issues raised, the wide range of accounting data that can be obtained, and the numerous calls over many years for standardization, there has been less regulation of their accounting than might have been expected. The development of accounting regulations and practices in the extractive industries in five countries is reviewed and salient issues are explored. The continuing international diversity is the result of the vested interests of large companies, technical accounting complications, and a view that, given the limitations of historical cost accounting, the cost of regulation and standardization would not be justified. As a result of the conceptual framework programs, rising commodity prices, and increased environmental accountability, extractive industry accounting has recently returned to various agenda. This review shows that the debate is likely to be more related to politics than accounting and may not be altogether rational or conclusive.*

The lack of uniformity and latitude of acceptable accounting practices in the extractive industries have been acknowledged over a long period; notable studies include Field (1969), Lourens and Henderson (1972), and Most (1974). The diversity has been deplored for many years as shown by the following quotation:

> I hope that the time is approaching when the system of standardisation will be extended to mining costs and mining accounts. At the present the methods for each of these are legion, and seem designed to conceal rather than reveal the financial position; but there must be some one method, in accounts especially, which is best of all. (Curle, 1905, p. 29)

The purpose of this paper is not to argue that uniformity is necessarily to be desired but rather to indicate that in view of the industries' distinctive characteristics, their economic significance, the radical effects of alternative accepted accounting policies, the relatively high potential agency costs, and the numerous and early calls for

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standardization, there has been remarkably little regulation of extractive industries (EI) accounting. As will be shown, the responses by professional accountancy bodies to EI accounting issues have been limited and inconsistent.

Comparing the actual and potential performance of individual companies within the same industry is problematical, and appraising the relative merits of similar companies in different countries requires comprehensive local knowledge. In 1959 Smith and Brock commented that accounting for mining presents such severe problems that the accounts are "regarded rather lightly inside and outside the industry" (p. 14). A full generation later Pratt (1990) reported that British users of oil and gas accounts see cash flow information (free from accounting policy distortions) as more important than profit and loss figures.

This paper first identifies some characteristics of EI accounting and then explores salient issues in the relevant pronouncements and practices in the USA, Australia, Canada, South Africa and the UK. The emphasis is not upon the oil and gas industry but upon issues that are relevant to mineral commodities generally, i.e., "any non-living materials[1] that can be recovered from the natural environment" (van Rensburg and Bambrinck, 1978, p. 1). The review exposes possible explanations for the lack of conformity and the dearth of EI accounting regulation.

SPECIAL CHARACTERISTICS OF EXTRACTIVE ACTIVITIES

In this section it will be shown that mineral and other extraction has several characteristics which differentiates it from most other activities and that there might, therefore, be an *a priori* expectation that EI accounting is regulated on a specific industry basis; a view supported by the specific exclusion of extractive industries from four International Accounting Standards.[2] Furthermore, the characteristics suggest that while information disclosure is *particularly* valuable to shareholders and creditors of EI companies, conventional accounting practices are not well adapted to supplying relevant information.

Finite Lives

The basic operating EI company is often an organization of finite life. In many instances it will have been formed for the purpose of exploiting the mineral reserves in a particular lease area and once all commercially feasible ores have been extracted, the company will end. The value of the company is derived from the expected sales of finite mineral reserves and is therefore a 'wasting asset'—specialized expenditure on equipment, shaft-sinking, and other development costs is generally a 'sunk cost'.

A consequence is that, except to the extent that funds are retained in working capital or a sinking fund, earnings will represent both income and 'realization' of capital. This clearly has implications for the concept of capital maintenance and for equitable taxation.

Finite life mining companies are particularly prevalent in South Africa. This may be one reason for the development of that country's 'appropriation method' of accounting. This eccentric method does not ensure that the 'true' value of capital is maintained (since depletion of ore reserves is not charged against revenue) but does ensure that, when operations cease, losses on disposal of mining assets do not prevent

all distributable reserves being available for payment as dividends. By contrast, North American, and to some extent Australian, extractive companies do not see themselves as finite life organizations and plough back earnings into new ventures.

Another consequence is that where finite life companies are formed for the exploitation of specific reserves, the majority of the shares are often held by mining finance companies. This arrangement allows the operating companies to benefit from the expertise of a large group and allows outside investors to diversify away the high specific risk relating to individual operations. Similarly, the use of joint venture schemes is common in the extractive industries; while individual organizations may have finite lives, the groups do not.

Historical Cost

A second special feature of EI activities is the lack of direct relationship between costs and revenues; historical costs are less relevant than in most other commercial operations. As stated in the FASB discussion memorandum:

> This is not as great a problem in most other industries, where the cost in a transaction is normally considered to be a fair measure of the value received, but it is a problem in the extractive industries, where the costs incurred in the discovery of mineral reserves in most cases are not indicative of a fair measure of the value received. (1976, p. 244)

Indeed, not only are revenues less influenced by costs than in other industries but costs are influenced by revenues; when product prices rise mines respond by exploiting lower grade (higher cost) ores than they would be prepared to use when demand is less buoyant. Increases in average product costs in such circumstances do not necessarily reflect inefficiency.

A combination of the apparent limitations of conventional historical cost accounting and political pressures arising from dramatically higher oil prices led, in the late 1970s, to proposals in the USA for reserve recognition accounting (RRA). It was argued (SEC 1978) that, in order to be useful, accounting information produced by the extractive industries should be consistent with the following assumptions:

- discovery is the most significant event and proved reserves constitute the most important asset;
- investor decision-making requires information on proved reserves, and the value of reserves should be recognized as an asset in the balance sheet while discoveries and other changes in valuations should flow through the income statement.

The RRA proposals were rejected by accounting professionals on the grounds that they would overturn the realization convention; additionally, estimates of the size of reserves and future levels of prices were too subjective and difficult to audit. RRA was also attacked by those who emphasized accounting's stewardship role and saw assets as unexpired costs rather than guides to value. Wise and Wise (1988) commented that there is no point in trying to force extractive industry accounting into a cost-based format and that uniformity and comparability will not result in more useful information. "Any progress towards more meaningful and useful financial information must come from increased *supplementary* disclosure of those items relevant ... (and) conventional

financial statements should be downgraded in their importance" (p. 30). This approach is an echo of Field (1969) - "mineral reserves in excess of capitalized discovery and development costs is an '*off-balance sheet' asset* of the enterprise and is a resource of importance to the investor" (p. 138, emphasis added). As a compromise separate disclosure of a standardized measure of discounted cash flows from proved reserves has been required in the USA since 1982.

More fundamentally, the lack of a direct cost-revenue relationship, the industry's capital intensiveness, and the delay between expenditure and revenue, make the application of the matching principle particularly difficult. Often there is a long lead time between the beginning of exploration and the 'proving' of discovered reserves and then again before they are translated into revenue. The appropriate time to recognize revenue can be argued to be as early as the 'proving' of reserves or as late as the delivery of the refined output. Likewise expenses can be recognized early or deferred (the difficult question of "when is a cost an asset and when it is an expense", Vent and Milne, 1989, p. 58).

In particular, the extent to which unsuccessful exploration expenditure is capitalized as an asset (reflecting part of the 'value' of successful exploration) varies between companies.[3] Accordingly, the distribution of the profits over the lifetime of a mine varies dramatically depending upon which of a range of plausible accounting policies (all supported by the matching principle as shown by Whittred, 1978) are chosen.[4]

Uncertainty and Capital Intensiveness

Uncertainty has general relevance to accounting in several ways. The greater the dispersion of possible outcomes:

- the more valuable is predictive information,
- the greater the incentive to provide a range of ownership structures to attract providers of capital with varying degrees of risk aversion, and
- the greater the tension between the conventions of matching, realization, and prudence.

From a theoretical perspective one can see disclosure of accounting information as a response to agency costs which are potentially greater for firms with highly volatile returns.[5] Returns from extractive industries are particularly risky; selling prices are uncontrollable and volatile[6] and a high proportion of costs are fixed. This is aggravated by uncertainty of land access and environmental approval processes, of finding economic mineral reserves,[7] of the technical feasibility of extraction, and of taxation and other government policies. Thus extractive enterprises might be expected to reduce agency costs by voluntary disclosures. This expectation is confirmed by, for example, the disclosure by Australian mining companies of the values of reserves[8] and by the monthly profit reports[9] and quarterly technical reports provided by South African mining companies. As stated by Morris "it is no accident that there is unrivalled press coverage of affairs in the extractive industries" (1975, p. 76).

Uncertainty is aggravated by the highly capital intensive nature of modern EI. Material sums are invested in exploration with uncertain pay-offs. Potential reserves need to be evaluated and then shafts sunk, mountains moved, off-shore platforms built,

and so forth; and all this expenditure is incurred before any saleable product is obtained. These features have implications for the distinction between revenue and capital expenditure, product costing, and capital maintenance. There are many parallels with the accounting problems faced by the railway companies of the 19th century.[10] A second consequence of the uncertainty of outcomes and the degree of capital intensiveness is the development of specialized organizational structures. Structures, such as joint ventures (with 'farm-ins', 'carried interests' etc.) and the Australian 'no-liability' companies, can require distinctive accounting procedures.

The tension between various conventions is illustrated by the varying treatment of pre-production expenses. A prudent approach would be to write off interest costs and expenditure on exploration in the periods in which they have been incurred; the conventional notion of *matching* would dictate, however, that these should be deferred and expensed in the periods in which the resulting benefits are recognized. Likewise, there is conflict between the conventions of realization and of prudence. In most accounting, profit is recognized (subject to provisions in respect of uncertainty, collectability, etc.) at the time of the critical event or point of sale. In construction contracts this is taken to be the building of the bridge or whatever and the certification by a surveyor of a progress report. One might argue that unless there is excessive uncertainty, since the critical event for EI companies is the discovery of proved reserves, profit should be recognized at that point.

Accountability

A further special characteristic of EI activities is that, for several reasons, they face greater public accountability pressures than many other industries. Unlike most businesses, mines are exploiting a finite natural resource and there is an inclination to feel that these should belong to the community as a whole. Natural resources are always potential targets for nationalization and those who exploit them will not usually wish to be seen to be making excessive profits. This is particularly so when there are natural monopolies and price regulation.[11] Thus, for example, the British Gas accounts are stated on a 'current cost accounting' basis to eliminate the upward effect of inflation on profits.

Second, extractive industries hold a central place in many developing countries. In many instances they are the major contributor to GNP, foreign currency earnings, and tax revenues. In 1991, fuels, minerals, and metals accounted for 26% of all merchandise exports from the world's 99 poorest countries[12] and calls for public accountability are strengthened by the fact that the shareholders and senior management are frequently foreigners. Governments of developing countries, e.g., Nigeria, have an interest in making the accounts of EI companies understandable and comparable and there have, for several years, been calls upon the International Accounting Standards Committee (IASC) to attempt to harmonize EI accounting internationally.

Third, there is public concern as to the actual and potential effects the extraction, processing, and transport of natural resources have on the environment. These concerns relate to issues, such as marine oil pollution, the pollution of river systems, the creation of a 'mine dump landscape', the effects of open cast mining, and subsidence above old underground mines. They are reflected by the large sums that are being spent on environmental restoration[13] and by the fact that extractive industry companies, with

chemical and utility companies, are in the forefront of the trend towards environmental reporting (KPMG, 1993, p. 5). (For a review of the environmental and societal pressures faced by EI companies see Blainey, 1993, pp. 372-380).

The highly charged relationship between EI accounting and societal accountability is well illustrated by the use of accounting data in British Coal's pit closure program over the last 10 years.[14] A decision to close down a 'conventional' private-sector company is relatively straightforward; with a public-sector organization exploiting non-renewable resources it is not at all straightforward. The decision requires not only accurate and logical cost accounting information (difficult to obtain because of the existence of overheads, joint costs, sunk costs, decommission costs, subsidies/tariffs, and uncertainty) but also recognition of externalities, social welfare considerations, and strategic political ramifications.

ACCOUNTING REGULATION

Some Historical Background

Through the nineteenth century a *laissez-faire* attitude to accounting regulation[15] prevailed and the needs of society "were seen as being satisfied if accounting reports provided for the needs of investors and ensured the efficient allocation of capital. Thus, legal disclosure requirements sought to meet society's needs by attempting to satisfy those of creditors and investors.[16] ... Developments in regulation have also come about in response to shocks (largely in the form of scandals or business failures) experienced in the financial reporting environment" (Taylor and Turley, 1986, p. 19).

'All that glisters is not gold' and the history of mining abounds with cases in which ill-informed investors and creditors have lost fortunes. In the 1820s there was massive British speculative investment in the silver and gold mines of Mexico and South America. There was a belief that fabulous wealth would have been tapped earlier had it not been for the Napoleonic Wars. After a period of intense speculation in mine shares the market collapsed in 1825 and much hardship followed as unpaid capital was called in.

Shocks such as that of 1825, the slump in railway shares in 1837, and problems in insurance and banking led to a general reconsideration of company law. In 1844 John Duncan testified that "as there will always be an extensive class of buyers and sellers of shares ... it is the duty of the legislature to keep some degree of control over the birth and course of life of joint stock companies."[17]

Another period of losses by investors in mines was 1871-1883. For instance, of the 71 new gold and silver companies formed in Britain between 1881-1883 only eleven survived more than five years! Even as recently as 1969 there was the remarkable Australian Poseidon Boom[18] which was based on inaccurate information. The anonymous definition of a mine as 'hole in the ground owned by a liar' is not without foundation.

Mining has been an important human activity for thousands of years but the protection of investors in EI companies was made more important by several factors which came together in the nineteenth century. One was the split between ownership and management that was encouraged by the proliferation of limited liability companies.[19] Another was the development of capital intensive mechanized mines necessary for the efficient exploitation of deep-level ores. And third, there was the opening of territories new to

Europeans and the discovery of important minerals. The thirty years between 1841 and 1871 spanned the discoveries of Californian gold by the 'forty-niners', Australian copper (1841) and gold (1851), Pennsylvania oil (1859), South African diamonds (1866), and gold (1871), which were to lead to unprecedented flows of investment capital around the world; much of it coming from Britain. These discoveries were preceded by the British Joint Stock Companies Act of 1844 which provided for incorporation through the general registration of companies; companies so registered were required to submit annual balance sheets and auditors' reports and permit the accounts to be inspected by the shareholders.[20] Most countries with significant mining industries were under some degree of British influence through the 19th century and the Acts of 1844, 1856, and 1862 are thus important for EI accounting internationally.

Early Attempts at Voluntary Regulation

"From the mid-nineteenth century the more respectable mine share dealers tried several times to establish their own separate and permanent place of business where they could introduce regulations to enforce honest and trustworthy dealing," (Burt, 1972, p. 124). However, none of these specialist Mining Exchanges lasted more than ten years. They failed for a variety of reasons including (according to the *Mining Journal* of 30 June 1855) "jealousy, or that want of unity which unfortunately, in too great a degree characterizes mining adventure".

The two most influential mining bodies at the end of the nineteenth century were the American Institute of Mining Engineers and the English Institution of Mining and Metallurgy. In response to numerous calls for standardization, the latter body established in 1908 a Mine Accounts and Cost Sheets Committee to work toward a standard system for the entire British mining world. As shown by Vent and Milne (1989, pp. 70-72) the report of the committee, published in 1910, drew widespread and influential support. It did however contain inconsistencies (e.g., as regards the need for depreciation) and its impact was limited by its voluntary nature.

Products and Countries of Interest

Extractive industries have been defined (Australian Accounting Standards Board) as those which search for, and extract from the ground, natural substances such as minerals (including coal), oil and gas, sand, clay, stone, and salt; regenerative resources such as forests are not included. The most valuable industry, worldwide, is that of oil and gas production with output worth more than the sum of all other extractions put together. Perhaps as a consequence, the accounting of oil and gas organizations has also received much more attention than that of other mines. The relative importance of other minerals is shown in Table 1.

The countries that are of interest to this paper are those which satisfy the following criteria:

1. Have, or regulate investment in, a range of extractive industries that are materially significant to the world economy;
2. Have active capital markets and thus a need for wide exposure of investor information.

Table 1. Annual Value of Mineral Production

	Million US $
Aluminum	24,000
Copper	25,000
Diamonds	6,000
Gold	24,000
Iron Ore	18,000
Lead	3,200
Manganese	3,400
Nickel	7,000
Phosphate	5,600
Platinum Group	3,100
Silicon	5,500
Sulphur	5,100
Zinc	10,800
Other minerals	23,600
Total	164,300

Notes: 1. This table is designed to give a rough indication of the relative importance of the different minerals on the basis of estimated turnover. The figures are based on 1990 production and 1991 average prices.

2. Energy Minerals are not included in Crowson's table. However, from *Metals and Minerals Annual Review* (1991), and SG Warburg Securities (1992) the following data emerge:

- global oil production in 1990 was estimated to be worth $442,000m.
- international coal production has been estimated to be worth $150,000m. per annum.

Source: Adapted from Crowson (1992).

Table 2 shows a ranking of the countries with the highest value of annual production of energy minerals and of other minerals. Concentrating on those countries with interests not restricted to oil and gas and having active capital markets restricts the list to USA, South Africa, Australia, and Canada. The UK regime is also reviewed because of the importance of EI investment to the UK economy and because of the eminence of the London Stock Exchange. The five countries are all among the 13 countries that have representation on the board of the IASC. They are also all within the 'Anglo-Saxon' sphere of accounting influence (Radebaugh and Gray, 1993, pp. 79-80) allowing a presumption of similarity in accounting practices. (Wallace and Gernon, 1991, p. 240).

We consider first the two countries that have accounting standards concerned specifically with accounting for the extractive industries (USA and Australia). Only the Australian standard (issued in 1976) deals with the extractive industries *in general.* In the USA, accounting for oil and gas received much attention through the energy crisis-ridden 1970s and there have been several FASB standards since SFAS 19 was issued in 1977. This, and other subsequent standards, have been amended and consolidated into SFAS 69 (*Disclosures about Oil and Gas Producing Activities*), issued in 1982 and extant.

Table 2. Production of Minerals by Country

Country	Energy Minerals		Other Minerals	
	US $ m.	*Rank*	*US $ m.*	*Rank*
USSR	82,417	(1)	12,857	(1)
USA	65,072	(2)	8,766	(2)
Saudi Arabia	39,261	(3)	—	(140)
China	29,244	(4)	2,568	(6)
Iran	24,909	(5)	110	(53)
UK	12,018	(6)	333	(34)
Iraq	11,995	(7)	33	(83)
Canada	10,280	(9)	4,443	(4)
Australia	4,270	(2)	3,072	(5)
South Africa	1,292	(36)	6,816	(3)
Brazil	946	(38)	1,363	(8)
Chile	325	(55)	1,511	(7)

Note: Due to the passage of time the $ values themselves are no longer relevant. However, except with respect to the former USSR, they nevertheless give a useful idea of current rankings.
Source: Adapted from Callot (1981).

Australia

Early Legislative Financial Reporting Requirements

While financial reporting formalities had been made voluntary in Britain by the Companies Act of 1855, the period between 1860 and 1880 was one during which the various Australian colonies each had their own legislative regulations covering accounting by mining companies. In respect of New South Wales this is well described by Morris:

> ... this first occurred in 1861 with an Act limiting the liability of mining partnerships. Managers of these partnerships were compelled to publish full and correct half-yearly accounts of assets and liabilities in the Government Gazette. However, the contents of those accounts were not specified. ... Mining company disclosure was otherwise unregulated until 1896 when a fresh No Liability Mining Companies Act required the presentation of balance sheets in a form similar to the model in the 1874 Companies Act. (1984, p. 58)

'No Liability Companies', of which there are at present some 960, are unique to Australian mining but have their origins in the old Stannary companies of Devon and Cornwall. Shareholders are not obliged to commit any uncalled capital but can choose rather to forfeit their shares at any stage. Given the nature of mining operations whereby directors may wish to ensure that they could raise further funds for future expansion should it be necessary, and given the high risk that everyone could 'lose their shirts', this is a sensible arrangement.

The Development of AASB 1022 'Accounting for the Extractive Industries'

Extractive industries have been critically important to the development of Australia and still account for 32% of its merchandise exports (World Development Report 1991). Developments in Australian mining have often been exciting (e.g., the 1850s, the

Poseidon boom) and emotive (e.g., aboriginal land rights, environmentalism). "Activities within the mining industry were furthermore instrumental in generating a 'new nationalism', a result of the widespread influence of foreign 'multinationals' in the late 1960s and 1970s which gave rise to the 'selling the farm' analogy." (Selig, 1980, p. 10). Clearly, mining is a central pillar of the Australian economy; it is also important in world terms (see Table 2), not least because approximately 50% of the borrowings of the Australian mining industry are denominated in 'foreign' currencies.[21]

As in other parts of the world mine accounting was an important issue at the end of the nineteenth century. The gold mines of Western Australia attracted favorable comment from various sources (see Vent and Milne, 1988, p. 64) and the accounts of Lake View Consols Mine were considered an example of "admirable practice." This was one of 18 mines managed by Herbert Hoover (subsequently to become President of the United States) and his firm Bewick, Moreing & Co which dominated Western Australian mining. It could be argued that by 1904 Australia was a leader in terms of the quality and standardization of mining accounting. However, despite a recommendation that the Chamber of Mines of Western Australia establish accounting standards and the appointment of a special committee for this purpose, there was to be a wait of some 70 years before the issue was addressed.

Through the 1960s minerals and oil experienced boom conditions and between 1950 and 1969 the value of Australian mineral production per head increased by 346%.[22] The booms, and subsequent investor losses (notably the 'Poseidon affair') once again raised the interest in EI accounting.

> That some investors made wrong decisions is now clear; what is not clear, although frequently assumed in retrospect, is that the published financial reports in some way contributed to such losses. If so, it was argued, the time had come to make a stand on the issue of uniform accounting principles for the extractive industries. (Lourens and Henderson, 1972, p. 4)

One response was the requirement, from 1970, of the Australian Associated Stock Exchanges that EI companies should provide quarterly reports on details of production, development, and exploration activities. It is worth noting, however, that, to the extent that additional accounting rules apply, these are concerned with *cash flows,* not revenue and expenditure.

Another response was the Lourens and Henderson survey of extractive industry reporting practices, initiated by the Research and Technical Committee of the Australian Society of Accountants. The findings of the survey, published in 1972, confirmed that there was considerable diversity of accounting practices, and suggested that this diversity should be reduced where possible. It was also noted that few of the companies even disclosed the accounting practices adopted. Lourens and Henderson argued that, in view of the diversity, any immediate attempt to implement a detailed uniform set of accounting standards was likely to meet with such resistance as to fail, unless it had backing of legal or other sanctions.

The findings, together with Field's (US) Research Study No. 11 published in 1969, were influential in the issuing of an exposure draft 'Accounting for Extractive Industries' in 1973; released three years later as DS 12 by the Australian Accounting Standards Committee. The requirement that pre-production costs should be written off, unless incurred within two years of balance sheet date, caused vigorous protest. Lobbying the smaller exploration companies was successful in removing the two year limit from the

revised standard issued in 1977. In other respects DS 12 has followed through, largely unchanged, into AAS 7 and AASB 1022. Selig (1980) argues that, while conditions in the Australian and international extractive industries were conducive to regulation, credit should also go to "the quite disproportional influence ... (of) a small band of dedicated academics ... in response to the needs of an industry which as in crisis" (p. 25).

The standard allows considerable latitude, such as, for example allowing limited capitalization of exploration (via the 'areas of interest' approach) or immediate write-off of costs. It does not require disclosure of physical reserve quantities nor does it tackle the issue of putting a balance sheet value to the reserves. There is latitude concerning inventory valuation and there are no detailed prescriptions concerning the appropriate provision for restoration costs. Nevertheless it was a major achievement at the time particularly insofar as it clearly identified important issues and defined terms.

AAS 7 was the subject of a detailed review which resulted in a comprehensive Draft Discussion Paper[23] in 1989. Its recommendations were not, however, taken into account when, in that same year, AAS 7 became AASB 1022 and obtained legal backing.[24] According to the review-panel chairman "the momentum for change had dissipated and there was a feeling that 'if it aint broke, don't fix it'."

United States of America

In the United States there is not an equivalent of the British-style Companies Acts; individual States have Corporations Laws, but these do not specify accounting or disclosure rules. Indeed there are not any compulsory financial reporting or auditing requirements for companies other than those whose stock is publicly traded. Such companies have to be registered with the Securities and Exchange Commission (SEC) which has authority to set accounting standards. Until 1973 most of the SEC's work was delegated to various committees of the AICPA (including the Accounting Principles Board). Then in 1973, with the support of the SEC, the APB was replaced by the FASB. Thus, in the USA, as more recently in the UK, there was a move from self-regulation to more broadly-based private sector regulation with a degree of government backing for standard-setting.

In general, the SEC has not interfered with the work of the FASB though there have been exceptions. One such occasion was when, in 1978, the SEC overruled the SFAS 19 requirement that exploration expenditure should be written off except to the extent that it led to the discovery of viable reserves. It did so, at the time of the international oil crises, on the grounds that such treatment was excessively prudent and contrary to public interest. Indeed the SEC wanted the value of proved reserves to be brought into company balance sheets via 'reserve recognition accounting' (RRA).

In the U.S. there are specific industry accounting standards covering a variety of activities, e.g., Real Estate, Healthcare, Motor Carriers, Television, and Computer Software. Because of the economic significance of the oil and gas industry (particularly through the 1970s and early 80s), massive institutional interest and resources were put into oil and gas accounting and, between 1977 and 1982, four standards were issued.

Nevertheless, despite an FASB conclusion[25] that "similarities of operations inherent in the extractive industries warranted the inclusion of all such industries in the discussion of the accounting and reporting issues" the US still does not have an accounting standard

that covers the extractive industries in general or non-oil mining in particular. It is significant that the FASB has not only failed to make progress in regulating general mining accounting but has in fact retreated from positions earlier held. SFAS 39, now withdrawn, required disclosure of 'quantity and price' information relating to mineral reserves other than oil and gas. Furthermore, the scope of SFAS 69 is limited to oil and gas companies under the jurisdiction of the SEC—for other American oil and gas companies the standard's only prescription is the disclosure of accounting policies.[26]

For those companies to which SFAS 69 applies, the most significant requirement is that which calls for supplementary unaudited information on:

- proved reserve quantities
- capitalized costs
- property acquisition, exploration and development expenditure
- results of production operations analyzed by geographic area
- standardized measure of discounted future net cash flows relating to proved oil and gas reserves; (similar to the controversial reserve recognition requirement introduced and then dropped by the SEC).

The main area of latitude in FAS 69 is the flexibility regarding the treatment of exploration and development expenditure since companies may choose between the Successful Efforts (SE) and Full Cost (FC) approaches. An aspect of American practice that is materially different from elsewhere is the way in which abandonment and restoration costs are charged against income. Whereas elsewhere it is generally recommended that a provision for estimated future decommissioning costs is recognized, or built up by a charge spread over units of production, in the USA these costs are merely taken into account in determining rates of amortization of capitalized costs. Two confusing effects of this area are that the provision is masked within accumulated depreciation and that towards the end of a mine's life, accumulated depreciation will exceed the cost of the assets to which it relates.

For non-energy mining companies the 'generally accepted accounting principles', to which auditors refer, are simply based on practices that "have evolved over the years" (Coopers & Lybrand, 1991, p. 56). These practices do, however, tend to be more prudent than those of countries such as Australia and Canada.[27]

South Africa

South Africa is a major producer of gold, diamonds, coal, platinum, and ferrous metals—total mineral production was worth approximately $13,607 million in 1991.[28] The accounting policies that have developed in Southern Africa have some fundamental differences from those applied elsewhere. Mining, of diamonds in the Orange Free State and gold in the Transvaal, commenced some 20 years later in South Africa than in Australia and North America. This, together with the fact that the techniques were necessarily more cooperative (because of the depth of the gold ores and the infrequency of nuggets on the surface), meant that *corporate* mining entities were more immediately established than in the other two 'gold rush' countries.

Several famous companies, such as De Beers Mining Company (1880), Gold Fields of South Africa (1887), and Johannesburg Consolidated Investment (1889), were

formed in the 1880s. These companies generally adopted the 'double account' system of accounting whereby sunk capital is regarded as irretrievable and no depreciation is provided. Following British case law (Lee v. Neuchatel Asphalte Company, 1889) there was no call for providing depreciation for wasting assets that will not be replaced and the entire surplus of income over outgoings could be distributed. To quote from *The South African Accountant and Auditor,* 1914:

> It is one of the primary elements of the Company Law of England, ... that a company when paying dividends to shareholders must retain its capital intact. It is, however, laid down by recognised custom, supported by legal decisions, that a company formed to work a wasting asset (e.g. a mine) is under no legal obligation to do this; in fact, it is entitled to distribute all available income without making provision for replacement or maintenance of its capital assets. (p. 133)

However, out of prudence and to support their case against excessive tax being imposed, it became common for mining companies to make a special charge against profits. By transferring to a non-distributable reserve an amount, which together with share capital, equalled expenditure on mining assets they ensured that when mining ceased, either because ores were exhausted or for some other reason, the full amount of distributable reserves could be paid out as dividend. This accounting policy, which has much the same effect as expensing all capital expenditure and came to be known as the 'appropriation method' was formally recommended by the National Council of Chartered Accountants[29] in 1974 as follows:

> ...the following note with regard to accounting policies will be uniformly used ...
>
> **Accounting Policies**
>
> In accordance with the accounting practice generally adopted by the gold mining industry in South Africa the following policies, which are consistent with those of previous years, have been applied:-
>
> (a) The company's mining assets are of a wasting nature and in order to recognise this aspect the company policy is to appropriate from profits within the life time of the mine such amounts which, together with the paid up share capital (and share premium account) will equal (be approximately equal to) the expenditure on mining assets. Profits so appropriated are not therefore available for distribution to shareholders. In pursuance of this policy no account has been taken of:-
>
> (i) depletion (or exhaustion) of ore reserves;
> (ii) depreciation of mining assets (fixed assets).
>
> Replacement, maintenance or renewals expenditure on mining assets is (wholly or partially) charged against revenue when incurred.

Other interesting features are that values of stocks of finished product and work in progress are not normally included in the accounts, and that debt financing is seldom used.

The consequences of the use of the 'appropriation method' include:

- earnings figures which are overstated *vis-à-vis* those from other activities (due to the non-depreciation of mining assets, but partly offset by the full write-off of renewals, replacements, and the cost of supplementary exploration);
- an initial delay (while the capital redemption and mining asset provisions are being accumulated) before dividends can be declared and thereafter a tendency for a full pay-out of earnings;

- balance sheets with mining assets at original[30] undepreciated historical cost, and large non-distributable reserves.

As stated by Robertson:

> Fixed assets are largely in the form of 'a hole in the ground' and plant and buildings which will ultimately be of relatively little value. All successful mines gradually build up a comfortable excess of current assets over current liabilities, during, or immediately after, the initial period of expansion, and dividend declarations are then for many years directly related to the annual profits until the end of the mine's life is drawing close. Consequently, the balance sheet is of little interest except in the early years and latter years of the life. (1960, p. 56)

Or to put it another way, since earnings are not generally retained and trading stocks are not valued, the effect is that:

Share Capital & Reserves = Mining assets, with net current assets about zero.

The system does have some advantages, particularly the prudent approach to the payment of dividends in early years from what is a highly speculative activity. The unnecessary retention of surplus cash is avoided and the proximity to simple cash-flow accounting in the middle years may be to its merit. But investors need to 'have their wits about them' towards the latter stages of a mine's life. EI analysts pay very little attention to the earnings figures of South African gold mines and correspondingly more to present values of forecast finite dividends. As is often the case, accounting practice has probably been influenced by taxation; in this case an abandonment of the 'appropriation method' might weaken the case for holding on to the generous tax treatment which allows all capital expenditure to be deducted in the year in which it is incurred.[31]

Within the general framework, there has for many years been significant diversity of accounting treatments. *The South African Accountant* of March 1918 (p. 139) carried the following anonymous contribution:

> A good deal has been written deploring the complete lack of standardisation in mine accounts, and the apparent absence of any desire on the part of anybody, except possibly the shareholders, that something approaching uniformity should be achieved. To the man in the street it must seem extraordinary that while in all technical departments a high degree of standardisation has been brought about, the financial department, the controllers of which should, one would imagine, be the first to appreciate the advantages of uniformity, are the last to make any move.... It would obviously be more satisfactory from a shareholders' point of view if all accounts were arrived at in the same manner and presented in the same way, and if such expressions as 'mining', 'development', 'reduction', 'general expenses', etc., possessed the same significance in the published accounts of various mining companies.... The effect of the absence of uniformity in connection with the presentation of accounts is that as often as not the balance sheet, except as regards the floating assets and the liabilities which have to be met in cash, conveys nothing to the reader, whether he be a skilled accountant, a mining engineer or an ordinary shareholder without any special qualification.

In South Africa, unlike Canada or Australia, accounting standards still rely on the professional bodies for their authority; there is no government backing. Since 1975 the SA Accounting Practices Committee has produced various papers in an attempt to standardize mining accounting treatment and bring it closer to that of other countries. These papers have recognized that the 'appropriation method' conflicts with the going

concern and matching concepts. However, no success in the form of an Accounting Standard has been achieved.

Recently there has been a new impetus for change, this time from the tax authorities, who are particularly concerned about the absence of value attributed to stocks. As a result, a Chamber of Mines *discussion draft* has been produced which may conceivably become the world's second EI accounting standard. In general the draft merely codifies current South African practice and it seems that vested interests will ensure the retention of the 'appropriation method'.

Canada

It has been estimated[32] that minerals, including fuels, account for about 25% of Canadian exports. As long ago as 1963 the Canadian Institute of Chartered Accountants published a study entitled *Accounting Problems in the Oil and Gas Industry.* This study, and the Toronto Stock Exchange's concern with sub-standard reporting which led to work by Mulholland (1967) were both important contributions to the academic interest in the industry that led eventually to Australian and American standards.

Another important CICA study, *Accounting and Financial Reporting by Junior Mining Companies* was published in 1988. As in other parts of the world, there is a dichotomy between established EI companies and those termed 'junior'. Many of the latter are involved exclusively in exploration and do not themselves produce income. Also, being undiversified, small and without financial reserves, they incline towards less conservative accounting policies. In particular, their attitude towards either carrying forward or writing-off exploration costs is often different to that of companies with integrated operations. In Canada there is a tendency:

> ... to follow a policy which capitalizes or defers such costs pending the possible discovery of economically recoverable resources and their subsequent development ... the note outlining this accounting policy is usually accompanied by a further commentary that such costs are not intended to be a reflection of future value, but simply a representation of costs incurred to date on a particular project, which will be written off if the project is sold or abandoned, or which will be amortized if the mining properties concerned are brought into production. (Coopers & Lybrand, 1991, p. 55)

The Research Study sanctioned this approach but recommended that normal administrative costs should be expensed.

Another area of Canadian treatment at variance with that in other countries is the practice of valuing some stocks at net realizable value even if this is above cost. It is of interest that this early recognition of revenue was supported by Paton in 1922, "The allocation of revenue to accounting periods in terms of production rather than sale is not an entirely unreasonable procedure if production is the main end of the enterprise, subsequent sale being merely a routine incident, to be taken for granted." (p. 455). In Canada the method is only applied once a contract is in place for the sale of the output and the quantities and price have been agreed.[33] It is suggested by Coopers & Lybrand (1991) that this widespread practice may have its origins in past tax rules which allowed new mines a three-year tax holiday thereby encouraging companies to maximize profits in that period. Furthermore, because tax losses expire after six or seven years, and since resource companies typically generate losses in early years, it is to their advantage to value inventory at a high value (based on selling price) to minimize the risk of tax losses

expiring.[34] The policy, while countenanced by IAS 18 (para 9), would not be acceptable in the USA under the SEC registration rules. Since the passage in 1975 of the Canada Business Corporations Act there has been legal backing for the Accounting Recommendations of the Institute's Handbook. This contains only one specific reference to extractive companies: statement 3060 includes a requirement to provide for site restoration costs. The generally accepted accounting principles referred to in the audit reports of Canadian extractive industry companies are, as in the USA, merely current industry practice.[35]

Other sources of regulation of Canadian accounting are the various provincial Securities Act and the day to day practice of the provincial regulators. For instance the regulators, who impose control through their reviews of company prospectuses, embrace everything in the CICA Handbook, for example, the oil and gas guideline (and not just those parts mandated by the CICA).

United Kingdom

Extractive industries are a vital part of the UK economy. In 1990 Petroleum products, at 7%, were the largest export industry and the UK's coal industry was the eighth largest in the world. Other minerals, such as copper, tin, and specialist clays, have been important at various times. In addition the London Stock Exchange is the most important foreign source of equity finance for EI companies worldwide. Some 200 extractive industry companies are listed and many of them, for example, Minorco, RTZ, Lonhro, Hanson, BP, and Shell, have British headquarters.

Furthermore, through the 19th and 20th centuries, Britain has exerted a disproportionate influence over the discovery and exploitation of minerals worldwide. As Burt (1972) quotes from the *Mining Journal* of 1847, "London may be said to be the very focus of mining business in which city the majority of English mines are represented and where the system is supported by the largest capitalists in the world." But, for many years, mining companies were to a large extent unregulated. It has been argued (Parker, 1990) that the financial and accounting regulation that did exist through the second half of the 19th century, relating for instance to railways, banks, insurance companies and utilities, was imposed for reasons of monopoly, privilege, and safety and not primarily for the protection of shareholders. Mines, though potentially dangerous to some, were not monopolists and were not given special privileges, and consequently remained unregulated. An interesting exception was the Stannaries legislation of 1887, relating to the metal mines of Devon and Cornwall, which included some basic accounting requirements.[36]

British accounting regulation by way of professional standards commenced in 1970 with the formation of the Accounting Standards Steering Committee.[37] Since 1990 accounting regulation has been effected by the Accounting Standards Board (ASB) and the associated legal backing. Given the importance of the coal industry and (since 1975 when production from the Brent and Forties fields started) of oil and gas, it is perhaps surprising that the accounting is relatively unregulated; there is no mandatory accounting standard relating to the extractive industries and companies have remarkable latitude. As regards coal, the profession's reticence is explained by the fact that since the late 1940s the vast bulk of coal mining has been done by the nationalized British Coal Corporation. The accounting policies of British Coal are governed by the Coal Acts (of 1946 and 1971) and the Board of Trade directs the form of the accounts.

The accounting regime for the British oil industry has been one of self-regulation. Four SORPs (Statements of recommended practice with which compliance is voluntary) have been issued by the Oil Industry Accounting Committee.[38] The 1986 SORP 'Disclosures about oil and gas exploration and production activities' generally followed the U.S. position (SFAS 19 of 1977) of the time and sanctioned both the SE and FC methods of dealing with exploration and development costs. The less conservative FC approach tends to be used by smaller companies involved in riskier activities. While understandable, this is nevertheless ironical since the relationship between the cost of exploration and the chance of success is clearly closer for the established companies that are exploring on a very large scale.

SORP 1 recommends: 'ceiling tests'[39] be undertaken annually and also to tighten disclosure generally; in particular, it recommends disclosure of the quantities of proved reserves, together with the change in the year.

SORP 2 'Accounting for oil and gas exploration and development activities' addresses the broad issue of whether historical-cost based accounting should be replaced by alternative value-based methods but concludes that this would be inappropriate. It also reiterates that recommending a single basic method of accounting, for example, successful efforts or full cost, would be counter-productive and potentially damaging.

SORP 3 'Accounting for abandonment costs' followed in 1988. It states that abandonment is a cost of production and should be charged against income on a systematic basis over the full productive lives. The statement acknowledges that there may in fact be a large liability for abandonment costs from the outset of production and that it could be argued that it should be shown on the balance sheet. Despite this, due to the uncertainty of the scope and the technology that will be available, it does not believe that incorporating an estimate of the full liability would enhance the usefulness of oil company balance sheets.

SORP 4 'Accounting for various financing, revenue, and other transactions of oil and gas exploration and production companies' was issued in 1991 and deals with a variety of more peripheral issues. It was the first SORP to be issued under the new regime and contains the following statement:

> The ASB has approved the OIAC for the purpose of issuing recognised SORPs. This arrangement requires OIAC to follow the Board's code of practice for the production and issuing of SORPs.... (this) does not entail a detailed examination of the proposed SORP by the Board. However, a review of limited scope is performed. On the basis of its review, the Board has concluded the SORP ... does not appear to contain any fundamental points of principle which are unacceptable in the context of current accounting practice or to conflict with any existing accounting standard.

It has been shown that the SORPs deal with much of oil and gas accounting. They do not apply to other extractive industries and are mandatory, neither by law nor in leading to qualified audit reports on non-complying accounts. Many of the recommendations, such as that in SORP 1 requiring disclosure of physical reserves, are not complied with.[40] The situation has led Russell and Lyons (1993) to develop the following interesting hypotheses:

> **H1**: *the UK government has allowed the North Sea oil industry flexibility in accounting because of the special risks it faces and its importance to the economy*;
>
> **H2**: *self-regulation of accounting practices leads to SORPs that promote the* status quo.

Table 3. Selective Summary of Pronouncements on Treatment of Salient Issues

Issue	*Australia AASB 1022*	*United States SFAS 69*	*South Africa SAICA Recom'n & Draft G'line*	*Canada CICA H'bk & G'line*	*United Kingdom SORPs*
Mandatory pronouncement	yes	yes	no	yes/no	no
Capitalisation of pre-production costs allowed?	yes (A of I)	yes (SE or FC)	yes (A of I)	yes (SE or FC)	yes (SE or FC)
Disclosure of pre-prod'n cost carried forward	yes	yes	no	no*	yes
Disclosure of current yr pre-prod'n exp'ture	yes	yes	no	no*	yes
Depreciation of mining assets	yes	yes	no	yes	yes
Disclosure of ore reserves	no	yes	no	no**	yes
Disclosure of valuation of ore reserves	no	yes	no	no	no
Valuation of inventories	yes (cost)	yes (cost)	no****	yes (cost or NRV)	yes yes
Provision for abandonment & restoration	yes***	no	yes	yes	yes

Notes: * not specifically addressed in the Guideline or the Accounting Recommendations but "full disclosure is encouraged"
** information tends to be given voluntarily
*** low level of detailed prescription
**** base metal inventories are valued
SE refers to "successful efforts"
FC refers to "full cost"
A of I refers to "area of interest"—a variant of SE

Discussion

There is significant diversity in accounting by EI companies in the countries considered. As the pronouncements selectively summarized in Table 3 are not mandatory except in Australia and the U.S., actual practice is even less uniform. It may also be observed that even where standards are mandatory they are permissive (treatment of pre-production costs being a particular case in point).

Extractive industries have had a turbulent history and have always been high risk activities. Investors, employees, and communities have from time to time suffered from severe financial and organizational shocks. For many countries mineral and energy extraction represents the main economic activity and it has been a crucial engine in the economic development of the five countries considered in this paper. Furthermore, it inevitably faces unusual social and environmental accountability pressures.

Evidence has been given by Vent and Milne (1989) that the movement between 1895 and 1915 to standardize mine accounting internationally was one of the first such movements. In the late 1970s significant institutional effort and resources were again focussed on the area. Indeed, according to Cairnie (1985, p. 1216) "the concentration of research effort on one accounting problem is probably unequalled in the history of accounting research." In view of these factors, and in the light of the IASC's aim of harmonizing EI accounting internationally, we may reasonably ask the following questions:

- why does such a diversity of materially different recommended practices exist between countries?
- why, within individual countries, do recommendations and requirements allow such remarkable latitude?

One might have expected that the high agency costs alone would have forced a less inconsistent and limited accounting regime. Positive accounting theorists, who see the provision of accounting information as a response to agency costs, would argue that if there is free competitive contracting between investors and corporate management this "should mean that the information is well designed for its purpose and that the quantity is optimal in terms of the cost/benefit trade-off". (Whittington, 1993, p. 315). One of the obstacles to this free market model is contracting costs. Unless there are mechanisms to ensure comparability between companies "it is not within the individual company's power, in isolation from others, to determine its optimal accounting policy. Moreover, many of the benefits of comparability are *external* to the individual company, accruing to potential shareholders or shareholders of other companies. This leads us inevitably to the need for a *standard contract* for the provision of accounting information" (loc. cit.). Hence the role of governments and professional institutes.

The oil crises of the 1970s, and consequent pressures from central government, did lead to the development of a mandatory oil accounting standard in the USA. However, the latitude of this standard allows one to derive, as illustrated for instance by Davidson, Stickney and Weil (1985, p. 605), an absurd range of possible earnings and balance sheet figures. Australia is the only country where a standard relating to all EI activities has been issued, and it too allows wide flexibility.

In the UK, where oil and gas are the most valuable exports, there has been one attempt to produce a mandatory standard (Exposure Draft 28, Petroleum Revenue Tax) but it failed to achieve adequate support. Despite the importance of extractive industries to Canada they are barely mentioned in the CICA handbook, and conventional profit and loss accounting really only commences once production is 'up and running'. The South African system with appropriation to reserves, no depreciation, and inventories not valued is completely anomalous. Several tentative answers to these questions present themselves. In some situations it would appear that the balance of power is very much in the companies' favor. Exploitation of the North Sea oil and gas reserves, for instance, has been dominated by the massive multinationals that had been established for many years and could point to the accounting latitude enjoyed elsewhere. Furthermore, the government may, in a sense, have colluded with the oil companies in a desire to present an attractive case to potential investors considering a risky and capital-intensive venture.

Similarly, in South Africa, the mining industry is dominated by five powerful mining houses which extend their influence through the Chamber of Mines cartel. The technical

director of the S.A. Institute of Chartered Accountants wrote in 1993 "you will be able to conclude that they want to account in the same misleading manner as they have been doing for 100 years and they will oppose any form of regulation."[41] As regards the USA the AICPA reported[42] that companies "have only indicated their preference for broad, general rules which would leave to management's judgment and discretion the extent of disclosures which would be meaningful and understandable to readers."

While it has been argued in the UK (e.g., Accounting Standards Committee, 1983) that it is inappropriate to develop industry specific accounting standards, this appears to be a 'red herring'. It has been shown that several distinctive aspects of EI activities require specific information disclosures. If there was a balance of political will in favor of regulating EI accounting the unusual economic fundamentals *would* provide a persuasive case.

A second factor behind the non-uniform and permissive regime is that EI accounting issues are unusually 'thorny'; they can be difficult to understand, difficult to codify, and difficult to justify from a conceptual framework.[43] For example, the matching principle has been used persuasively to support both the FC and SE approaches to accounting for exploration expenditure.

A third contention, based upon the section of this paper which dealt with the special characteristics of EI and which is related to the 'thorns' referred to above, is that accounting, inevitably, is not very useful for decisions in extractive industries. EI accounting is at one of the margins of the discipline and shows, particularly clearly, the limitations of conventional historical cost accounting. Chambers commented in 1979 that the Australian EI standard perpetuates a notion of matching but that "a balance sheet based on costs does not give an indication ... in any sense pertinent to judgments of solvency, asset composition, gearing or rate of return." (p. 15) Extractive companies do have some similarities with general 'trading' businesses and conventional accounting does have a stewardship role, but it is perhaps pointless trying to 'tinker' with an inappropriate model in the hope of providing decision-usefulness.[44] Decision-relevant financial reporting *is* required, but it is unlikely to be based upon historical cost. In EI, more than in most industries, 'bygones are forever bygones' and this is evident from the failure of user interest groups to coalesce in pursuit of prescriptive accounting regulation.

This review of the development of accounting regulation in the extractive industries shows such regulations to be limited in scope and inconsistent in prescription. It is suggested that the resultant diversity of practices is an outcome of the accidental nexus of powerful vested interests of large politically sensitive companies, fierce political lobbying by smaller exploration-type companies, technical accounting complications, and a perception that, given the limitations of historical cost accounting, the cost of regulation and standardization would not be justified.

POSSIBLE FUTURE DEVELOPMENTS

Increased regulation of extractive industry accounting has, in the past, been most active in times of mining booms (Britain c.1900, Australia c.1970) and dramatic rises in commodity prices (USA c.1978) which, perhaps, explains why so little has changed through the 1980s and 1990s. Recently, however, EI accounting has returned to various agenda; at present the IASC has plans to develop an industry-specific standard as does

South Africa, while the Australian standard is to be revised in the light of the conceptual framework. The recovery in commodity prices has coincided with growing pressures for environmental accountability and the continuing international attempt to base accounting practices on a rational conceptual framework. In addition the South African capital markets have become more outward looking and it may be expected that China and the constituents of the former USSR may wish to adopt established financial reporting procedures in their extractive industries. It is thus possible that, after a long gestation period, there will be a new impetus towards standardization within countries and harmonization between them.

There are five areas in which significant progress could be made. First, a requirement for the full, supplementary disclosure of proved and probable physical reserves and a standardized DCF valuation of proved reserves. In the US oil industry, but not other EIs, this has been a requirement since 1982.

Second, there should be further moves towards standardization of the treatment of pre-production expenditure. The long-standing debate of the relative merits of Successful Efforts and Full Cost accounting is already being re-examined relative to the conceptual framework programmes; in Australia, AASB 1022 is being revised because it is not consistent with SAC 4 or AASB 1010 which requires non-current assets to be written down to 'recoverable amounts'. Likewise, the FASB has produced an exposure draft on the impairment of long life assets which is likely to introduce 'ceiling tests' on capitalized pre-production expenditure.

Third, it would be helpful if a common policy on abandonment were developed. The UK's Oil Industry Accounting Committee has recently issued a discussion paper on the implications of FRS 5 for oil industry accounting. It seems likely that the future costs of abandoning installations will be recognized as a liability on UK company balance sheets. This development is far in advance of some countries in which likely abandonment costs are neither disclosed nor provided for. The debate in this area is likely to be moved along in the US by the forthcoming standard on nuclear decommissioning.

Finally, the ongoing fundamental differences between Southern African accounting practices, such as the appropriation method, and those applied elsewhere should be removed. The SA Accounting Practices Committee has recently produced a guideline but pressure from the mining companies has prevented full harmonization.

Indications of semi-strong efficiency in capital markets and the particular limitations of conventional accounting in the EIs suggest that regulation would be most effective if it concentrated on supplementary disclosure of data and underlying assumptions rather than on accounting rules. There is already much mandatory and voluntary disclosure of technical operating and cash flow data by mining companies internationally. It would be helpful if this was a harmonized requirement. However, the forces of inertia are considerable. In a review of the development of international accounting standards Kenny and Larson (1993, p. 537) refer to studies supporting the case that organizations will, in general, lobby regulatory bodies for accounting treatments which broaden their ability to 'manage' reported income. Furthermore, they find that lobbying companies tend to fight against any change in the *status quo*. Of particular relevance they find that the IASC seeks acceptance from its constituency by adapting its position to that which is palatable to the lobbyists.

It is a nice coincidence that the regulation of extractive industry accounting promises, once more, to be topical around the 100th anniversary of the Institution of Mining

and Metallurgy's drive for standardization at the end of the last century. This review has shown that the debate is likely to be as much related to politics as to accounting and may not be altogether rational or conclusive.

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NOTES

1. Categorized by van Rensburg and Bambrinck (1978) as follows: Precious minerals and metals, Non-ferrous metals, Ferrous metals, Non-metallics, and Energy materials.
2. Depreciation (IAS 4), Research and Development (IAS 9) Property, Plant and Equipment (IAS 16), and Leases (IAS 17).
3. The Successful Efforts (SE) versus Full Cost (FC) debate has been one of the main contentious issues in the regulation of extractive industry accounting. While both positions can be supported theoretically, the strongest advocates of the FC approach (which capitalizes a higher proportion of exploration expenses and is therefore less prudent) are those that do not have a wide portfolio of explorations and are not also involved in more stable 'downstream' activities.
4. For a good illustration see Davidson, Stickney and Weil (1982, pp. 60-65).
5. See Watts and Zimmerman (1986) and Craswell and Taylor (1992).
6. For instance, according to Tugendhat and Hamilton (1975, p. 12), in the ten years after the discovery of oil in Pennsylvania, prices for a barrel of oil fluctuated wildly between $20 and 10 cents.
7. Even once the existence of mineral reserves has been discovered there is, according to Mackenzie and Bilodeau (1984), a less than 2% probability of finding an 'economic' mineral deposit.
8. See Craswell and Taylor (1992).
9. Robertson (1960), SA Accountant.
10. "A substantial amount of money was required to finance the acquisition of capital assets and, unlike most other industrial developments ... it was not possible to commence activity on a small scale and then to expand on the basis of retained profits.... The major accounting problems emphasized by these circumstances were the separation of capital expenditure from revenue expenditure, the valuation of fixed assets, the calculation of periodic profit, and the form and content of financial statements" (Edwards, 1985).
11. "The political process is argued to provide incentives for managers of some firms to adopt income-decreasing accounting choices. For instance, it is argued that if a firm is subject to regulation of its prices its managers have incentives to adopt income-decreasing accounting choices in order to provide a more convincing case for an increase in prices and hence increase the firm's cash inflows. Similarly it is argued that if a firm is politically sensitive its managers have incentives to adopt income-decreasing accounting choices in order to reduce its political sensitivity and hence the probability of suffering negative wealth transfers or political costs which would increase the firm's cash outflows" (McInnes, 1990).
12. Source: World Bank, World Development Report 1991.
13. In 1991/92 $117 million was spent by Australian mining companies (excluding oil and gas companies) on rehabilitating mining and processing sites (Australian Mining Council, 1992).
14. For a full discussion see Brignall and Fitzgerald (1989).
15. Regulation of EI accounting originates from governments (e.g., Companies Acts and tax legislation), regulatory agencies established or recognized by governments (e.g., the SEC and the FASB), the accounting professional bodies (e.g., the Canadian Institute of Chartered Accountants), trade associations (e.g., the South African Chamber of Mines) and stock exchanges (e.g., the Yellow Book rules of the Stock Exchange, London).
16. Indeed, many held that it was up to the shareholders to look after themselves. "There was no reason to compel directors to issue accounts to shareholders, since shareholders could

call for them themselves if they wished" (Sir George Jessel as referred to in Parker, 1990, p. 54).

17. Testimony before the Select Committee on Joint Stock Companies reported in Gayer, Rostow and Schwartz (1953, p. 416).
18. On 24 September 1969, the day that Poseidon's consultant geologist observed the percussion drill disgorge the massive sulphides of nickel and copper from the discovery hole, the Sydney Stock Exchange share price index for non-ferrous metals was 3892.... At the time of Poseidon's triumphal annual general meeting, on 19 December 1969, when the chairman told expectant investors throughout the world that a major mine would be established, the index reached 5101. Then, during the next ten days, the index swept up to an all-time peak of 5870, which was a rise of more than 50 per cent in about three months.... In November 1969 *The Times* observed that Poseidon was "the share of the year—if not of all time as far as stock market performance was concerned." The accompanying warning that in reality the share price was still not tied to anything concrete, and that the share price was not a good investment for the private shareholder, went unheeded as much in London as it did in Australia.... The effect of the spectacular rise in the Poseidon share price (from $1.10) to $280 was to increase the market value of the company from about $2.2 million before the strike to about $711 million.... At the time of writing, late 1973,... Poseidon was valued in the market at about $27 million, the shares being quoted at about $7 each (Australian Securities Markets, 1974, pp. 2.1-2.4).
19. English Companies Acts of 1856 and 1862 made limited liability *generally* available. From 1834 limited liability status had been obtainable but only at the discretion of the President of the Board of Trade. It could be obtained when there were public policy interests, for example, where the operation was hazardous and deterrent to small partnerships, as in mining; secondly, where the capital was beyond the resources of a few individuals, as in railways; and thirdly, where extended responsibility was desirable, as in insurance. (For further details see Shannon, 1954).
20. These formalities were made voluntary by the Companies Acts of 1855 and 1856. In the consolidating Companies Act of 1862 they were part of the regulations of Table A of the First Schedule which companies were recommended to include in their Articles of Association. Some degree of control over the contents of the Articles was effected by the Registrar of Joint Stock Companies (see, for example, the minutes of evidence to a Select Committee, 1867, reprinted in Edwards, 1986, p. 87).
21. 1992 Minerals Industry Survey (Australian Mining Council and Ernst & Young).
22. Lourens and Henderson (1972, p. 1).
23. Unpublished discussion paper commissioned by the Australian Accounting Research Foundation written by G. Harris and a review panel.
24. The Corporations Law requires that financial statements are prepared "in accordance with applicable approved accounting standards."
25. FASB Task Force conclusion reported in para. 117 of the FASB Discussion Memorandum "Financial Accounting and Reporting in the Extractive Industries" (1976).
26. The standard nevertheless does have influence to the extent that it is part of US GAAP and non-compliance will, generally, lead to audit qualification.
27. For instance, where the SE approach is adopted with respect to pre-production expenditure, the "areas of interest" tend to be smaller with the effect that less expense is deferred. Furthermore, where the exploration efforts are successful, a lower proportion of total costs is capitalized.
28. Source: *Metals and Minerals Annual Review, 1992.*
29. After an agreement had been reached between the Transvaal Society of Chartered Accountants and The Chamber of Mines. The accounting for *base metal* companies is similar to that of other commercial companies and was not included in this recommendation.
30. The cost of normal replacement is charged against revenue.
31. A parallel case is reported by Sidhu and Whittred (1993). In Australia in the 1970s tax effect accounting was adopted by a higher proportion of mining companies than industrial companies. They suggest that this choice of accounting method which resulted in increased reported tax rates may have been in defense against political pressure to remove miners' generous tax incentives.

32. *Mining Annual Review* (1991).
33. For much of the twentieth century the price of gold was fixed and, in many countries, the authorities were bound to buy all gold delivered to them. The use of NRV is restricted to producers of gold and some concentrates; it is not used by oil and gas producers.
34. I am indebted to Steven Leonard of the IASC for providing this information.
35. When a matter is not covered by the Handbook, generally accepted accounting principles are those that "are generally accepted by virtue of their use in similar circumstances by a significant number of entities in Canada" (CICA Handbook, 1992, para 1060).
36. See Dicksee (1892) for further detail.
37. Prior to 1970 the Institute of Chartered Accountants in England and Wales had been publishing a series of recommendations on accounting principles.
38. This committee (OIAC) was formed in 1984. The first chairman was the finance director of Shell UK Ltd. and the remaining members are drawn from oil companies, accounting firms, academics and representatives of user groups.
39. These ensure that the book value of capitalized expenditure in each cost pool is supported by anticipated (undiscounted) net revenues.
40. Brooks (1987, p. 72), at the time an employee of Shell and secretary of OIAC, suggested that "this situation reflects not so much a desire to conceal but simply the lack of consensus as to what should be provided."
41. Extract from a letter from the Director to the author dated April 1993. It should be noted that the letter also acknowledges the efforts made by the Chamber of Mines in preparing guidelines and the goodwill of the staff employed.
42. AICPA (1973, p. 27).
43. As pointed out in Heazlewood and Chye (1984), the history of mining accounting regulation is clear testimony to the peculiar difficulties encountered in extractive industries. Similarly, Vent and Milne (1989, p. 73) see mining's "non-uniform accounting practices as an inevitable result of the complexity of the industry."
44. As argued by Morris (1975, p. 78), interpretation of oil companies' accounts is difficult "but the main reason for this is really that the financial statements present an incomplete picture, not that the capitalisation/expense policies of companies differ." Likewise, OIAC, when referring to the standardized valuation of reserves as applied in the United States, comments as follows: "The general view appears to be that such problems should be addressed through further disclosures rather than attempting to substitute an alternative basis of accounting" (1990, p. 13).

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A Comparative Study of Cultural Influences on Financial Reporting in the U.S. and The Netherlands

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Key Words: Financial Reporting, Harmonization, Culture

Abstract: *This paper argues that financial reporting and its regulation have multiple purposes reflecting each country's social, cultural, and political environments. Thus, the original idea of harmonization as moving towards uniformity in accounting standards across countries may not be achieved as long as social, cultural, and political differences exist across countries. An alternative approach is a reconciliation strategy where an agreement is reached on basic recognition and measurement criteria and on a framework that enables users to reconcile financial statements from different countries while it also satisfies those countries regulatory requirements. To support this argument, the paper presents evidence from a comparison of financial reporting in the U.S. and the Netherlands within their respective cultures and an analysis of annual reports of a matched sample of American and Dutch publicly listed companies.*

Some argue that efforts to harmonize[1] financial disclosures have not kept pace with the growth of transnational business because those who set international accounting standards have limited powers to compel countries to adopt their standards (Peat Marwick Foundation 1988). In contrast, this paper argues that harmonization has not been successful because financial reporting and its regulation may have multiple purposes reflecting each country's social, cultural and political environments. Beresford (Beresford, 1990, p. 99) attributed the FASB's pessimism about international harmonization to its own experience dealing with conflicting domestic interests and its appreciation of the additional obstacles caused by '...nationalism accompanied by differences in language, capital market structure, political organization, cultural background, and perceived objectives of financial statements'. Thus, the original idea of harmonization as moving towards uniformity in accounting standards across countries may not be achieved as long as social, cultural, and political differences exist across countries (see Financial Times World Accounting Report 1992; Burchell, Clubb, Hopwood, Hughes and Naphapiet 1980; Harrison and McKinnon, 1986; Puxty, Willmott, Cooper and Lowe, 1987; Richardson, 1987; Violet 1983).

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An alternative approach in the short-term is a reconciliation strategy where an agreement is reached on basic recognition and measurement criteria and on a framework that enables users to reconcile financial statements from different countries while it also satisfies those countries' regulatory requirements (Beresford, 1990). Such a strategy may be successful because, despite their differences, financial reporting systems of industrialized countries such as France, Germany, Japan, the Netherlands, the UK, and the US must have provided a minimum level of useful and reliable information to sustain the successful market economies of these countries. Such a minimum level of reliable information is dependent on sound recognition and measurement bases. Nobes (1983, p. 5) argued that measurement practices are important because they determine the size of the figures for profit, capital, total assets, liquidity, etc. Hendriksen (Hendriksen, 1982, p. 4) noted: "An accounting structure, although logically formulated, does not convey meaningful interpretations unless the symbols and words representing descriptions or measurement are related empirically to real world phenomena." Hopwood (1991) stated that the active trading of information in the market is more likely to result in greater tolerance of ambiguity and diversity, subject to a basic guarantee of the underlying integrity of the key components of the information flows. In other words, if market participants can have confidence in the recognition and measurement criteria of financial information, they may be willing and/or able to deal with diversity in disclosure. **The success of this strategy and the increasing globalization of business and communications may lead in the long-term to complete harmonization of accounting standards.**

To support this proposal, the paper presents evidence from a comparison of financial reporting in the US and the Netherlands within their respective cultures and an analysis of annual reports of a matched sample of American and Dutch publicly listed companies. By presenting this evidence, the paper has two objectives. First, it hopes to contribute to the current debate on harmonization (Gernon, Purvis and Diamond, 1990; Parvis, Gernon and Dramond, 1991; Wyatt, 1992; Financial Times World Accounting Report, 1992; International Accounting Standard Committee, 1989). Second, it provides a method for comparative study of financial reporting of different countries that integrates the analysis of financial reporting practices and the structure of financial reporting regulation within a cultural context.

The rest of the paper is organized into three main sections: a section on a cultural approach for studying financial reporting, a section that presents an illustration of the proposed approach and a concluding section.

THE ROLE OF CULTURE IN FINANCIAL REPORTING

The Objectives of Financial Reporting

The IASC (International Accounting Standards Committee, 1988) defines the primary objective of financial reporting as that of providing information for economic decision making. While recognizing the existence of different types of users, the IASC assumes that information useful to investors will meet most of the needs of other users. The IASC assumes economic decisions require primarily an evaluation of an enterprise's ability to generate cash and cash equivalents on timely basis. However, while investors are obviously interested in the cash generation ability of an enterprise, many of them

are also interested in an enterprise's performance regarding the environment and other social and public issues.[2] So-called "social choice investments" are gaining popularity even among institutional investors (e.g., TIAA-CREF).

Furthermore, some have argued that financial reporting plays a role beyond providing information used directly for economic decisions. According to Cohen (1981), disclosure requirements may have gone beyond basic factual data clearly relevant for investing decisions to cover matters that affect corporate behavior. Lev (1988) suggested that the SEC requirements concerning disclosure bearing on the independence of corporate board members and management compensation may be aimed at affecting the conduct of firms. Mumford (1991) suggested that the major considerations underlying the European Community (EC) harmonization initiatives may reflect administrative feasibility and legal enforceability rather than notions of (economic) decision relevance. According to Hopwood (1991) some of the factors that will impinge on accounting regulation in the EC are the need to control public purchasing programs, developments in employee rights and the creation of a more environmentally oriented economy. Burchell et al. (1980) believe that accounting data are being used in the derivation and implementation of policies for economic stabilization, price and wage control, the regulation of particular industrial and commercial sectors, and the planning of national economic resources. In France, companies' annual reports are based on a national accounting plan that reflects tax regulations and national economic policies (Nobes and Parker, 1991).

Financial reporting is also seen as having a mediating role in labor relations. Burchell et al. (1980) noted that in some European countries, the centralization of accounting policy making has been enabled by the growing interest of the organized labor movement in information disclosure. In the Netherlands organized labor is represented on the Council for Annual Reports (CAR), which was first named the Tripartite Committee to reflect its composition of representatives of employers, employees, and professional accountants.

From the above discussion, it can be seen that the objectives and functions of financial reporting go beyond providing information about the "ability of an enterprise to generate favorable cash flows" to include providing information for regulatory, social, environmental and labor relations purposes. Moreover, the extent and type of this information differs between countries. These differences can be explained within a cultural context which is discussed below.

The Role of Culture in Financial Reporting

As all human activities, financial reporting as well as capital markets are influenced by culture (Douglas, 1989; Wildavsky, 1989). Goodenough (1970) observed that the relation of an economic state of affairs to a social one is often largely or entirely the product of human action that was itself informed and guided by the cultures of the actors. According to Granovetter (1985), the high level of order often found in the "market" depends on the nature of social relations between individuals and the network of relations between and within firms. Unique market characteristics found in advanced capitalist countries, such as the credit dominated financial system in Japan, heavy bank ownership of corporate equities in Germany, and priority stock in the Netherlands reflect sociocultural characteristics of those countries.

There is an awareness among many accounting researchers and standard setters of the social and cultural influences on accounting (Bereford, 1990; Gray, 1988; Perera, 1989). Many studies have shown that worldwide accounting and auditing practices can be grouped in clusters, each composed of countries that have some common historical and cultural characteristics (e.g., Frank, 1979; Nobes and Parker, 1991; Hussein, Bavishi and Gangolly, 1987). Several explanations are given for this phenomenon. Richardson (1987) defined accounting as a set of beliefs and techniques that has the ability to link actions and values so as to make those actions legitimate. The Financial Accounting Standards Board (1978) stated that the objectives of financial reporting are not immutable but are affected by the economic, legal, political, and social environment in which financial reporting takes place. According to Harrison and McKinnon (1986) financial reporting can be viewed as a social system with norms and values that reflect the culture of the overall society. They reported that the Japanese changed the regulatory system established by the American occupation authorities after the Second World War because it did not fit the Japanese cultural values. The system had been fashioned after the American model, which assumes a relation of independence between managers, investors, auditors and government regulators. Japanese norms and values call for more involvement of government in all areas of social and economic policy formulation and a lesser reliance on independent bodies. In addition, relations in the Japanese society are characterized more by cooperation and compromise than by insistence on rights. Japan's credit based financial system is embedded within those close personal relations prevalent in its culture.

Most accounting studies of culture have used Hofstede's dimensional model to identify cultural factors that are likely to be associated with accounting practices (Gray, 1988; Perera, 1989). In this study, as well, Hofstede's model is used to support the argument that culture influences accounting systems. The following discussion describes the model and relates it to financial reporting.

Hofstede's Dimensional Model of Culture

Hofstede (1985, p. 23) defines culture as "the collective programming of the mind which distinguishes the members of one human group from another." Through his empirical work, he identified four dimensions of values that can be used to classify cultures and understand the differences between them. An advantage of the model is that it identifies national culture by measuring the common components in the mental programming of "otherwise very different people who compose a nation together" (Hofstede, 1985, p. 1). This makes the model useful in understanding cultural influences in national differences in accounting and management practices. The following description for the four dimensions is based on Hofstede (1985, 1991).

Individualism-Collectivism

Individualism pertains to societies in which the ties between individuals are loose, and everyone is expected to look after himself or herself and his or her immediate family. Collectivism pertains to societies in which people from birth onwards are integrated into strong, cohesive in groups, which throughout people's lifetimes continue to protect them in exchange for unquestioning loyalty. Individualist societies tend to have higher

per capita GNP, individual freedom, an economy based on individual interests, and laws and rights that are supposed to be the same for all. It is expected that in individualist societies there will be more demand for accountability to individuals than in collectivist societies. Hence, financial reporting in individualist societies will be geared to individual users while in collectivist societies it will be geared to institutional needs.

Power Distance

Power distance is the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally. In organizations, the level of power distance is related to the degree of centralization of authority and the degree of autocratic leadership. In small power distance societies, decentralization is popular, subordinates expect to be consulted and the ideal boss is a resourceful democrat, prevailing political ideologies stress and practice power sharing and native management theories focus on the role of employees. In large power distance societies centralization is popular, subordinates expect to be told what to do and the ideal boss is a benevolent autocrat, prevailing political ideologies stress and practice power struggle, and native management theories focus on the roles of managers. In large power distance societies there will be less demand for accountability than in small power distance societies. Hence, in large power distance societies, as compared to small power distance societies, financial reporting will be less comprehensive and geared more towards the needs of those in power positions.

Uncertainty Avoidance

Uncertainty avoidance is the extent to which the members of a culture feel threatened by uncertain or unknown situations. In weak uncertainty avoidance societies there are few and general laws and rules, and one group's truth should not be imposed on others. In strong uncertainty avoidance societies there are many and precise laws and rules, there is only one "truth", and there is an emotional need for rules even if they do not work. Hofstede (1987) suggested that accounting systems are best understood as uncertainty-reducing rituals. Hence, in high uncertainty avoidance societies, financial reporting rules will be more detailed than in low uncertainty avoidance societies.

Masculinity/Femininity

Masculine societies emphasize achievement in terms of recognition and wealth, stress equity, competition, assertiveness, and resolution of conflicts through fighting them out, view economic growth as more important than the conservation of the environment, and prefer large organizations. In feminine societies, trying to be better than others is neither socially nor materially rewarded, everybody is supposed to be modest, people and warm relationships are important, the emphasis is on equality, solidarity, and resolution of conflicts by compromise and negotiation, and conservation of the environment is seen as more important than economic growth. Hence, in masculine societies financial reporting should focus more on economic issues and less on social and environmental issues than financial reporting in feminine societies.

Combined Cultural Dimensions Influence on Financial Reporting

Financial reporting in a country reflects the interaction between these four dimensions. To illustrate, assume there are only two cultures. One is an individualist culture that has low power distance, weak uncertainty avoidance, and is feminine, and the other is collectivist, has large power distance, strong uncertainty avoidance, and is masculine. The first one will have a financial reporting system that is geared to individual users, that is comprehensive, has fewer detailed rules and provides more information on social, environmental, and labor issues. The second culture will have a financial reporting system geared more to the needs of institutional users (e.g., government), a less comprehensive system with detailed rules, and less reporting on social, environmental, and labor issues. However, in Hofstede's model, each dimension is a continuum, and a country's score is the average of the individual respondents' scores. Also, a country's scores in the different dimensions may not be in the same direction. For example, a country may be an individualist culture with large power distance, or a collectivist culture with a large power distance. These differences explain the tensions in the financial reporting within a country. For example, in the same country some people may call for more uniformity while others may call for more flexibility. The assumption is that overall financial reporting will reflect the strength of each dimension in the country's culture. For example, in France the financial reporting system is detailed and geared more towards institutional users (Choi and Mueller, 1992). This reflects the rankings that Hofstede found for France on the dimensions of power distance (large, with a rank of 15), and uncertainty avoidance rank (strong, with a rank of 10/15), which more than compensated for its high individualist ranking (10). Hence, two countries that may have significant differences in only one or two dimensions may have differences in their financial reporting that would determine their positions concerning proposed international standards.

Which dimension or combination of dimensions may have the most influence on the focus of financial reporting in a country is an empirical question. To answer the empirical question the next section compares financial reporting in the US and the Netherlands. The section outlines the cultural differences between the two countries, compares their financial reporting in light of their cultural differences, and develops and empirically tests two propositions using data from annual reports of a matched sample of publicly listed companies.

AN ILLUSTRATION: FINANCIAL REPORTING IN THE U.S. AND THE NETHERLANDS

The US and the Netherlands were selected because there are many similarities between their market economies. Both countries have well developed capital markets and sophisticated investors. The stock market is the primary source of capital for firms in both countries, as indicated by the fact that market capitalization in 1988 represented roughly fifty percent of the gross national product (GNP) in the US and forty percent in the Netherlands (Slonik, 1991). The Amsterdam Stock Exchange is the oldest exchange in the world and has an approximately equal number of domestic and foreign registrants. The New York Stock Exchange is the leading stock exchange in the world. Furthermore, the Netherlands is a small and open country that has close relations with

the US, and one expects fewer differences between the two of them than between countries that are less open to outside influences. Many large Dutch firms conduct business and raise capital in the US. The Dutch hold approximately twenty percent of all foreign direct investment in the US and are one of the largest foreign holders of portfolio investments in the US (Smith, 1989). Hence, if investors are mainly interested in information as to firms' ability to generate favorable cash flows and serving their information needs is the primary purpose of financial reporting, one would expect no significant differences in financial reporting between the US and the Netherlands. However, differences have been found in their financial reporting (Nair and Frank, 1980; Nobes, 1983; Choi and Mueller, 1992). Despite of their differences, the Financial Times Survey of Annual Reports ranked the US first and the Netherlands second in 1980, and the Netherlands fifth and the US sixth in 1989 (Klaassen, 1991).

The American and Dutch Cultures

Hofstede (1980, 1985, 1991) compared the American and Dutch cultures using his dimensional model and reported that the two countries have no significant differences in three dimensions; both are high in individualism (ranking 1 and 4, respectively), are small power distance societies (ranking 38 and 40), and have weak uncertainty avoidance values (43 and 35). The high level of individualism, small power distance, and weak uncertainty avoidance found in the two countries fit their free enterprise capitalist societies and their concern with individual interests. They, therefore, have a common need for a minimum level of reliable financial information so that individuals may make informed investment and related decisions. Minimum reliable information requires quality measurement criteria (Nobes, 1983; Hendriksen, 1982; Hopwood, 1991). Hence, one can make the following proposition about the financial reporting systems of the U.S. and the Netherlands:

> *Proposition 1: No significant differences are expected in measurement practices between the U.S. and the Netherlands because differences in the cultural dimension individualism between the two countries are not significant.*

Hofstede found significant differences between the two countries in the masculine/feminine dimension (15 and 51). The masculine/feminine dimension seems to have a great influence in many facets of life in both societies (Hofstede, 1985). An elaboration of that influence is necessary to put the differences in their financial reporting in perspective.

In the masculine American culture people value free competition and tend to resolve differences by fighting them out (Hofstede, 1985). Equity and fairness are seen in terms of the opportunity to enter and benefit from competition, and any consequent inequality is accepted as a natural outcome. There is a preference for private initiative over governmental action in the American society, especially in the field of economics. Sutton, Harris, Kaysen and Tobin (1962) argued that the views that governmental power is inherently dangerous and that limited government is a great and unique American achievement are not only those of the business creed but also of the broader American ideology as well. They also noted that in the American business creed only activities

of individuals and voluntary associations can be productive and creative either in an economic or in a broader social sense.

According to Sutton, Harris, Kaysen and Tobin (1962), the US business creed espouses the belief that the labor market should not be different from the rest of the market. In such a market the natural process is bargaining between employer and individual employee and that collective action by employees through unions spoils the picture. They quote *The New York Times*: "Perpetuation of a vigorous free enterprise system will depend to a very large degree on how jealously management resists efforts to take over in part or in whole its particular sphere of activity and responsibility" (p. 123). Ketz and Fogarty (1992) documented the nonparticipation by labor in FASB's standard setting process. Hence, in the US a role for labor unions in accounting standards setting is neither considered nor demanded.

In the feminine Dutch culture equality and fairness are seen in terms of equal results, if not for individuals at least for groups. As a result, government in the Netherlands plays a major role in every facet of life. According to Shetter (1987) in the Dutch society planning is one of the central cultural institutions especially since the Second World War, when the Social Economic Council, the Foundation for Labor, the Nederlandse Bank, and the Central Planning Bureau played a major role in the economic and social life of the country. In addition, an active role for the government was necessary to mediate between the large social blocs that had developed along religious and class lines in the Netherlands. Windmuller (1969, p. 434) observed that: "Forward movement in Dutch society requires a large number of delicate adjustments. Except at times of national emergency new departures become possible only after a new consensus has emerged from endless discourse and reassessment. This is so because suggested ways of meeting manifest new needs must be shown on the one hand to harmonize with the fundamental though not necessary rigid principles espoused by several religious and ideological blocs and to protect the blocs' practical interests." In the Dutch culture people tend to resolve conflicts through negotiations and compromises (Hofstede, 1985).

The democratic system in the Netherlands is described as a pluriformity rather than a plurality because it is based more on blocs than individuals (Hofstede, 1991). In the desire to accommodate and give a voice to all blocs, election to the parliament is based on proportional representation, where candidates run in a list and any list that gets approximately one percent of the vote gets a representative in parliament. As a result most Dutch governments are a coalition of two or more parties. This contrasts with the American system where the individual candidate wins the election and where often times party affiliation may not be the deciding factor in the results of the election or in the positions taken by the successful candidate (e.g., President Reagan's success in pushing his program through Congress was due in large part to the support of conservative Southern Democrats).

The pluriformity system in the Netherlands works because it allows each bloc a great deal of freedom and flexibility and yet ensures that no bloc accumulates more advantages than the others. This is seen clearly in the educational system where any group can start a school and gets full state funding, to the extent that seventy four percent of the schools funded by the state are not public schools but have some religious or social affiliation (Shetter, 1987). More importantly, any financial gain achieved in any group is automatically granted to all other groups. Queen Beatrix in a speech to a group of California businessmen described the Dutch and the American systems very

aptly by noting that the Dutch tend to value equality in cases where Americans tend to value freedom (quoted by Hofstede, 1985).

The accommodation between blocs and the progressive social-welfare ideology noted by Shetter have contributed to cooperative relationships between labor and management. First, efforts are made to centralize collective bargaining by attempting to reach an annual central agreement between the representatives of employers associations, trade unions, and government. Local and enterprise level agreements are then based on this central agreement. Another device used is the "works council" where every establishment with a certain minimum number of employees is required to form a council of employee representatives. Management is expected to inform and consult with the works council of its plans. It is natural for the Council for Annual Reports to have labor representatives. Klaassen and Schreuder (1981) found employees to be interested in companies' annual reports.

Based on these cultural differences, one would expect financial reporting within the masculine American culture to focus on market participants and to see information as an important competitive tool that is provided reluctantly. On the other hand, in the feminine Dutch culture the emphasis will be on accountability to society, and information should be seen as important to inclusive participation. Information or many aspects of an enterprise activities should be readily disseminated.

It is also expected that the feminine Dutch society would demand more accountability concerning social issues. One such issue is the protection of the environment. Shetter (1987) observed that the environment was a major concern to the Dutch earlier than it was to most others in the world. Government planning agencies pursue vigorous environmental policies and many pressure groups and public-interest organizations have been active in successfully defending the environment.

In the US, while environmentalists have been active, their efforts in many cases were stymied by the masculine framing of environmental issues in terms of growth and jobs (e.g., former Vice-President Quayle's Council on Competitiveness). Hence, one expects greater accountability on environmental issues by Dutch companies than by American companies. The preceding discussion can be summarized in the following proposition:

> *Proposition 2: Disclosure, especially disclosure concerning social, environmental and labor issues, by Dutch companies will be greater than by American companies because of the significant different between the two countries in the masculine/feminine dimension.*

Before testing the two propositions with data from annual reports, the structure of financial reporting in the two countries is compared in light of their cultural differences.

Comparison of Financial Reporting Structure

Differences can be found between the two countries in (1) the users and uses of accounting information; (2) intellectual foundations; (3) the structure of rule making in financial reporting regulation; and (4) public involvement.

1. **Users and Uses of Financial Statements.** The FASB Concept Statement No. 1, *Objectives of Financial Reporting by Business Enterprises,* focuses the purpose of financial reporting in the US on providing to investors and creditors information useful

in making investment and similar decisions. In the Netherlands the 1970 Act on Annual Accounts of Enterprises (as amended in 1983 to harmonize with the European Community's Fourth Directive) defines the purpose of the annual accounts as follows: "The annual accounts provide such information that a sound judgement can be formed on the financial position and result of the enterprise and, to the extent to which annual accounts permit, on its solvency and liquidity." The Act does not focus on any group of users or even attempt to identify the different groups of users. The only requirement to be regarded as an interested party who can bring action under the Act is to have a direct and demonstrable interest in the annual accounts. Klaassen and Schreuder (1984) noted that since the 1970's there has been an increasing recognition of employees as stakeholders.

In addition, in the Netherlands the uses of financial information are not focused on decision making. Klaassen and Schreuder (1981) found that eighty five percent of their respondents read the annual report primarily for general orientation rather than for decision making. Klaassen (1991) noted that in the Netherlands reporting on stewardship is more important than providing information for investment decisions. This may be attributed to the structure of corporate governance in the Netherlands where power rests in priority shares, usually held by the supervisory and management boards, rather than in common stock (Sanders, 1977). Nobes and Parker (1991) believe this arrangement empowers the boards to resist takeover attempts based on purchase of company's stock in the market.

The focus in the US on investors and their needs is logical within a masculine culture that emphasizes market success and accountability to market participants primarily on contractual relations. On the other hand, the broader groups of users and uses in the Netherlands are also logical outcomes in a feminine culture that values participation, and accountability to society.

2. **Intellectual Foundations**. Unlike the detailed standards of the FASB, the 1970 Act has set only some very basic requirements and has permitted all practices deemed acceptable in the business world (Klaassen and Schreuder, 1984) or adjudicated by the Enterprise Chamber. The lack of detailed standards in the Netherlands compared to the US can be attributed to the differences in their intellectual orientation. Accounting in the US had its foundations in practice before emerging as an academic discipline, and while it has later drawn on economics and other disciplines, it has retained its practical orientation of problem solving on a piecemeal case by case approach (Buckley, 1980). Certified public accountants played a leading role in the development of accounting standards (Carey, 1979; Zeff, 1972). As a result, auditing concerns had a significant impact on the development of financial regulations (Hussein and Ketz, 1991). In contrast, accounting in the Netherlands developed within business economics and emphasized valuation and costing problems, with little attention to disclosure problems (Klaassen and Schreuder, 1984). Before the 1970 Act on Annual Accounts of Enterprises, there was practically no regulation of financial reporting (Nobes and Parker, 1991). Muis (1977) attributed this to the influence of business economics on the Dutch accounting profession. Under the leadership of Professor Limperg ("the pioneer of Dutch current value accounting") business economics theories were used to develop current value accounting principles that were used by many Dutch companies to prepare annual accounts. "Consequently the Dutch were never strongly in favor of defining what they felt were impractical and progress-stifling standards" (Muis, 1977, p. 293).

Zeff (1991) has speculated that the absence of scandals in the capital market in the Netherlands might have contributed to the lack of interest by the stock exchange and investor groups in financial reporting regulation. Zeff went on to say that management initiative in proposing the Tripartite Committee was prompted more by the idea of industrial democracy than by the desire to reform financial reporting. On the other hand, Zeff (1972) reported that in the US, some had cited inferior accounting and reporting practices as a cause of the massive decline in the stock market in October 1929. As an example, Zeff cited the instance in which the New York Stock Exchange had threatened to delist Allied Chemical & Dye Corporation unless it provided adequate information to stockholders. Thus, some of the emphasis in the US on tight financial reporting standards has probably emanated from the idea that lack of such standards has caused severe economic consequences.

3. **Rule Making.** The structure of standard setting in the US has several differences from that in the Netherlands. Although some of the earlier attempts at standard setting in the US were by government agencies (e.g., accounting for the railroad industry), most initiatives in standard setting, from the early efforts by George O. May and the New York Stock Exchange to the establishment of the FASB, were in the private sector (Zeff, 1972). In the Netherlands the initiative in the standard setting was taken by the government through the Social and Economic Council (Klaassen and Schreuder, 1984). While the securities laws in the US decree a certain quality of disclosure, there is no law as comprehensive as the Law on Annual Accounts in the Netherlands. The SEC has, for the most part, delegated standard setting to the FASB and has, by ASR No. 150, obligated publicly traded companies to follow FASB's pronouncements. On the other hand, in the Netherlands companies are not required to follow the Council for Annual Reports guidelines. The Council operates under the Social and Economic Council, a government agency, while the FASB is a completely private organization. The Council membership is comprised of representatives of different interest groups including organized labor, while the FASB members presumably are selected on an individual basis and are required to sever any former affiliation. In other words, members of the Council are advocates of their interest groups while FASB members are expected to be independent, objective, and detached from any specific group.

In the Netherlands the law is given more primacy and the guidelines of the Council for Annual Reports have no enforcement. On the other hand, in the US, the FASB pronouncements are enforced by both the SEC and the AICPA. While adjudication avenues are available in the US through the SEC's Administrative Proceedings and through the courts, interested parties who can successfully bring actions are more limited than in the Netherlands, except in the case of fraud or gross negligence. In the Netherlands the Enterprise Chamber of the Court of Justice in Amsterdam was established to ensure compliance with the Law (Klaassen, 1980; Nobes and Parker, 1991). Interested parties may complain to the Chamber if they believe the annual accounts of a company do not comply with the law. The term "interested parties" is defined broadly and includes shareholders, employees, works councils and trade unions, but does not include auditors. Failure to comply with the Chamber's ruling may be punishable by fines or imprisonment. Theoretically the Chamber's rulings are limited to the defendant company but usually they create precedents followed by others. The Chamber has not always supported the Council's guidelines and, according to the Attorney General of the Supreme Court, the Chamber is not obligated to follow the guidelines.

4. **The Public Involvement.** While the media and individuals have, over the years, campaigned against improper financial reporting in the US, there were never organized public interest groups as active as the several foundations in the Netherlands. There are at least three public interest organizations that monitor financial reporting in the Netherlands (Nobes and Parker, 1991). The Foundation for the Investigation of Corporate Information (Stichting Onderzoek Bedrijfs Informatie, SOBI) brings actions before the Chamber against companies whose annual reports it deems inaccurate or inadequate. The Foundation for Good Enterprise Behavior (Stichting Goed Ondernemerschap, SGO) conducts research on the quality of disclosure and advocates current value accounting. Finally, the Foundation for Social Accountability (Stichting Sociaal Aandeelhouderschap, SSA) buys shares in enterprises and uses shareholders meetings to promote reporting on social accountability.

As the foregoing comparison of financial reporting structure indicates, there are differences between financial reporting in the US and the Netherlands that are indicated in their conceptions of the users, in their intellectual foundations, in the structure of their regulatory bodies, and in the level and type of public involvement in each country. Considering the differences between the cultures of the two countries, it is understandable that there will be a more significant role for government and labor in the regulation of financial reporting in the Netherlands than in the US. In keeping with the feminist Dutch culture, the Law on Annual Accounts is very flexible as it allows the different groups to arrive at the acceptable accounting principles in the Council for Annual Reports, and it created the Enterprise Chamber to adjudicate any unresolved differences. Next is presented an empirical study that investigates how these socio-cultural differences are reflected in the financial reports of companies operating within each country.

Comparison of American and Dutch Annual Reports

An empirical study was undertaken to compare similarities and differences in annual reports[3] of American and Dutch companies in measurement practices and disclosure, including disclosure of information related to social, environmental and labor issues. It tests the following propositions:

> *Proposition 1: No significant differences are expected in measurement practices between the U.S. and the Netherlands because differences in the cultural dimension individualism between the two countries are not significant.*
>
> *Proposition 2: Disclosure, especially disclosure concerning social, environmental, and labor issues, by Dutch companies will be greater than by American companies because of the significant difference between the two countries in the masculine/feminine dimension.*

Sample Selection

The study analyzed a sample of annual reports of publicly traded companies from ; US and the Netherlands. Because of the small number of publicly traded Dutch

companies (200), a sample of forty Dutch companies listed in the Amsterdam Stock Exchange was selected and matched with American companies. The matching was based on the primary SIC code and revenues. The sample included twenty of the largest Dutch companies as ranked by Financieele Dagblad, (Appendix A) and twenty of the smallest Dutch companies as ranked by Financieel Economisch Lexicon, (Appendix B). The sample represent approximately 20% of Dutch companies listed in the Amsterdam Stock Exchange.[4]

The large companies are mostly multinational companies that are expected to be less influenced by home country culture than non-multinationals. Their inclusion in the sample may bias the results toward no differences between Dutch and American companies in the matched sample. Hence, any significant differences found would support the cultural influence argument.

On the other hand, the small companies were included because regulation of financial reporting in a country is concerned with all its companies, or at least with all of its publicly listed companies. The majority of these firms are small companies that may not have international activities or be of interest to international investors. Such companies may resist the incorporation of international standards into national financial regulations if they feel international standards add a burden to them without being useful to the users of their financial reports. An AICPA committee at one time discussed the creation of two sets of GAAP, one for large companies and the other for small companies (AICPA, 1976). While this idea was not adopted, the FASB usually considers the impact of its statements on small companies and has in some instances exempted them (e.g., FAS 33).

Data Analysis

Annual reports were analyzed using a "disclosure index"[5] developed for this study, based on indexes used by Cerf (1961), Choi (1973), and Buzby (1974). The index has items related to measurement and disclosure, including disclosure about social, environmental and labor issues. The FASB, in Statement of Financial Concepts No. 5 (Financial Accounting Standards Board, 1984, para 3) defines measurement as: "...the choice of an attribute by which to quantify a recognized item and a choice of a scale of measurement..." Disclosure is defined as the mode of presentation of information in the annual report, whether in the financial statements, the notes or other parts of the report. The researcher and another accounting professor identified the items in the index as measurement or disclosure-related items. Two other accounting professors reviewed the classifications before a final version was agreed upon. The social, environmental, and labor issues in the index were based on criteria used by Lafferty and Cairns (1979) and Gray, Owen and Maunders (1987). Appendix C lists the measurement criteria, the disclosure, and the social, environmental, and labor issues used in the statistical analysis.

For the twenty matched pairs in the large companies sample, the English translation of the 1988 annual reports was analyzed by two American accounting graduate students. The scoring was one if the item was found in the annual report and zero if it was not found. A sample of six annual reports was rated by both raters. Inter-rater reliability was assessed using Kappa Coefficient and was found to be 89.4%, which is significant at $p < .001$ ($K = 0.707$). Because of the high reliability of the coding scheme, coding

of the rest of the annual reports was divided between the two raters. However, each matched pair was analyzed by the same rater in order to ensure consistency within pairs.

The Dutch companies in the small sample did not have English translations of their annual reports. Hence, a Dutch accounting graduate student analyzed their reports and an American rater analyzed the matching American companies. The Dutch rater analyzed a sample of six American companies that was also analyzed by the American rater. Using Kappa Coefficient, inter-rater reliability was 80.7%, which was significant at $p < .001$ ($K = 0.614$).

Statistical Tests

Measurement. To test Proposition 1, measurement methods used in financial statements by both Dutch and American companies were compared to measurement methods allowed by US GAAP. The US GAAP was used only as a yardstick to determine the degree of agreement between each matched pair. This approach was followed because financial reporting requirements in both countries allow alternative methods of measurement for the same item. For example, in the US, in the same industry, one company may use FIFO while another may use LIFO for inventory valuation. Similarly, in the Netherlands a company may use straight line depreciation while another uses accelerated depreciation, and both are in compliance with regulation. Hence, considering a Dutch company that uses FIFO to be different from an American company that uses LIFO will show a difference between the two countries that is not valid since both methods are allowed in the two countries.

To make the comparison, the items (e.g., assets, liabilities, etc.) that were common to the financial statements of both companies in each matched pair were identified and their measurement methods were compared to the methods allowed by the US GAAP. Measurement concerning pensions was excluded because in the Netherlands there are industry-wide pension funds and hence many of the measurement issues related to company pension funds in the US are not relevant in the Netherlands. The total number of items for each pair is equal to the number of items for the American company in the pair because American companies had 100% compliance with US GAAP. The Dutch companies average agreement with US GAAP is 0.937924 for the large companies and 0.9814 for small companies (Tables 1 and 2). The Wilcoxon-Mann-Whitney Test (WMWT) showed no significant difference between American and Dutch annual reports in measurement methods used in the primary financial statements (Tables 1 and 2). WMWT was used rather than a Sign test or the Wilcoxon matched pair test because the difference between the matched pair is in one direction, since all American companies had perfect compliance with US GAAP. A test of proportion also showed no significant differences between the two countries. Most of the differences found between the two countries were due to some of the Dutch companies using current value accounting. It may be a surprise that not many Dutch companies used current value accounting for valuations in the financial statements. The Act as amended in 1983 allows companies to choose historical cost or current cost and most companies choose historical cost (Nobes and Parker, 1991).

Financial Disclosure. Because the number of items that can be disclosed in each category vary, the scores for each category were divided by the total possible disclosure in that category to obtain a composite percentage score. This ensures that each category

Table 1. Large Companies Measurement Data

Pair No.	*US*	*Dutch*	*% Dutch Agreement with US GAAP*
1.	12	12	1.0000
2.	16	13	0.8125
3.	15	15	1.0000
4.	13	13	1.0000
5.	11	11	1.0000
6.	11	9	0.8182
7.	11	11	1.0000
8.	10	10	1.0000
9.	13	11	0.8462
10.	9	8	0.8889
11.	13	12	0.9231
12.	11	11	1.0000
13.	11	10	0.9091
14.	14	14	1.0000
15.	15	14	0.9333
16.	11	10	0.9091
17.	12	12	1.0000
18.	11	9	0.8182
19.	10	9	0.9000
20.	12	12	1.0000

Notes: Dutch average agreement with US GAAP = 0.937924
Statistical Tests: $Z = 1.0994$; $P < 0.2716$

Table 2. Small Companies Measurement Data

Pair No.	*US*	*Dutch*	*% Dutch Agreement with US GAAP*
1.	9	9	1.0000
2.	11	11	1.0000
3.	11	11	1.0000
4.	9	9	1.0000
5.	11	9	0.8182
6.	11	10	0.9091
7.	9	9	1.0000
8.	10	10	1.0000
9.	9	9	1.0000
10.	10	9	0.9000
11.	8	8	1.0000
12.	10	10	1.0000
13.	7	7	1.0000
14.	11	11	1.0000
15.	7	7	1.0000
16.	10	10	1.0000
17.	8	8	1.0000
18.	11	11	1.0000
19.	11	11	1.0000
20.	8	8	1.0000

Notes: Dutch average agreement with US GAAP = 0.9814
Statistical Tests: $Z = 0.5146$; $P < 0.6068$

Table 3. Summary of Disclosure Data* Large Companies Sample

	Fin. Disclosure			*Soc., Env. & Lab.*		
Pair No.	*Dutch*	*US*	*Diff.*	*Dutch*	*US*	*Diff.*
1.	27.31	21.70	5.61	1.94	0.88	1.06
2.	33.33	33.63	-0.30	1.69	0.94	0.75
3.	30.24	24.67	5.57	2.99	0.92	2.08
4.	24.63s	21.34	3.92	1.08	0.56	0.52
5.	28.59	21.75	6.84	3.18	0.56	2.62
6.	29.81	23.45	6.36	1.82	1.97	-0.15
7.	27.97	23.70	4.27	2.90	0.56	2.34
8.	21.36	18.97	2.39	1.20	0.50	0.70
9.	26.59	29.23	-2.64	1.69	1.38	0.31
10.	25.42	19.92	5.5	0.64	0.75	-0.11
11.	21.34	25.78	-4.44	0.69	2.08	-1.39
12.	22.89	17.53	5.36	1.68	0.66	1.02
13.	21.32	20.38	0.94	1.58	0.56	1.02
14.	23.20	23.98	-0.78	1.14	0.77	0.37
15.	32.06	23.86	8.20	4.49	1.14	3.35
16.	21.00	21.69	-0.69	2.22	0.69	1.53
17.	24.36	25.31	-0.95	0.50	0.64	-0.14
18.	28.09	24.22	3.87	0.93	0.52	0.41
19.	23.03	18.24	4.79	0.87	0.38	0.49
20.	22.93	19.52	3.41	2.93	0.39	2.54

Notes: * The data represent the number of items (Appendix C) on financial disclosure, and social, environmental, and labor issues found in each annual report. The scoring system assigns a score of one if the item is present and zero if it is not. The scores for each sub-category were scaled into percentages to give each sub-category equal weight.

will have the same weight. For example, investments have more items that can be checked than accounts receivables, and without the conversion into percentages, disclosure of investment will have more weight than that of receivables. Some might argue that not all items should have the same weight, but any different weighing scheme will be just as subjective. Statistical tests were run using the raw scores, and the results were similar to those with percentages. Tables 3 and 4 present the percentage scores for US and Dutch matched pairs.

The statistical tests for financial disclosure, and for social, environmental and labor issues support Proposition 2 (see Table 5). The Wilcoxon matched-pairs signed-rank test was performed on the whole sample and separately on the large companies and the small companies. A second set of tests was performed using the Sign-Test and the results were similar to those of the Wilcoxon test. The results concerning financial disclosure showed significant differences between the large companies, with the Dutch companies providing more disclosure. More Dutch than American reports included parent company financial statements in addition to consolidated statements, more details about transactions with and investment in affiliated companies as well as more disclosure of directors' emoluments. Dutch companies also provided current value accounting information in footnote disclosure. American reports provided more disclosure about segments, taxes, and management stock option plans. Surprisingly, few reports from both countries provided forecast information or information of research and development, two areas that would be of interest to investors. However, in the case of small companies no significant difference was found in financial disclosure.

Table 4. Summary of Disclosure Data* Small Companies Sample

	Fin. Disclosure			*Soc., Env. & Lab.*		
Pair No.	*Dutch*	*US*	*Diff.*	*Dutch*	*US*	*Diff.*
1.	20.99	17.94	3.05	0.38	0.31	0.07
2.	18.06	16.66	1.40	0.56	0.27	0.29
3.	17.99	19.48	-1.49	0.25	0.33	-0.08
4.	13.88	18.78	-4.90	0.44	0.39	0.05
5.	14.17	17.62	-3.45	0.38	0.58	-0.20
6.	19.48	17.28	2.20	1.76	0.52	1.24
7.	14.93	16.53	-1.60	0.39	0.39	0.00
8.	15.66	19.79	-4.13	0.39	0.06	0.33
9.	20.98	16.37	4.61	0.52	0.06	0.46
10.	20.87	20.14	0.73	1.14	0.64	0.50
11.	18.33	15.51	2.82	0.81	0.25	0.56
12.	16.97	15.84	1.13	0.77	0.52	0.25
13.	19.19	18.21	0.98	0.58	0.39	0.19
14.	18.81	20.33	-1.52	0.91	0.52	0.39
15.	18.00	16.56	1.44	0.72	1.13	-0.41
16.	16.86	17.51	-0.65	0.71	0.72	-0.01
17.	21.73	18.28	3.45	1.16	0.52	0.64
18.	19.97	20.06	-0.09	0.46	0.21	0.25
19.	22.30	17.83	4.47	0.77	0.46	0.31
20.	15.46	19.48	-4.02	0.64	0.46	0.18

Notes: * The data represent the number of items (Appendix C) on financial disclosure, and social, environmental, and labor issues found in each annual report. The scoring system assigns a score of one if the item is present and zero if it is not. The scores for each sub-category were scaled into percentages to give each sub-category equal weight.

Table 5. Statistical Tests of Disclosure Differences between Dutch and American Companies

	Financial Disc.	*Soc., Env. Lab.*
Wilcoxon Sign-Rank Test		
Whole Sample	$S = 1.875$ $P < 0.0119$ $N = 40$	$S = 3.045$ $P < 0.0001$ $N = 39$
Large Companies	$S = .75$ $P < 0.0054$ $N = 20$	$S = 0.85$ $P < 0.0016$ $N = 20$
Small Companies	$S = 0.075$ $P < 0.7938$ $N = 20$	$S = .69$ $P < 0.0058$ $N = 19$
Sign Test		
Whole Sample	$Z = 1.58114$ $P < 0.0695$	$Z = 3.68295$ $P < 0.002$
Large Companies	$Z = 3.68295$ $P < 0.0001$	$Z = 2.68328$ $P < 0.0037$
Small Companies	$Z = 1.447214$ $P < 0.33$	$Z = 2.52357$ $P < 0.0058$

Notes: N = number of pairs with no ties.

Table 6. Statistical Tests of Differences between Large and Small Companies with Each Country

	Financial Disc.	*Soc., Env. Lab.*
Wilcoxon Sign-Rank Test		
Large vs Small Companies:		
Dutch	Z = 5.18 P < 0.0000	Z = 4.072 P < 0.0000
American	Z = 4.50 P < 0.0000	Z = 3.6185 P < 0.0003

Examination of the data in Table 4 shows that the direction of the difference is not heavily weighted towards one country, unlike the data on the large companies. While only in six of the matched pairs of the large companies an American company has more disclosure than its paired Dutch company, nine of the small American companies have greater disclosure than their paired Dutch companies. Moreover, small companies from both countries provided significantly less disclosure, especially in footnotes, than large companies.

Disclosure About Social, Environmental and Labor Issues. Dutch companies provided significantly more disclosure of the environment and labor issues than American companies. These differences are not surprising. Schreuder (1981) noted that corporate social reporting was rapidly becoming a normal business practice in the Netherlands, where many companies issue a separate social report. In addition to that separate report, many Dutch companies give wide coverage to social issues in their annual reports. For example, KLM and several other companies dedicated a significant amount of space to the discussion of the role of employees, their unions, and work council in the operations of the company. Environmental issues and the commitment of companies to cleaning the environment, including the funds allocated to such efforts, are also disclosed.

Differences Between Large and Small Companies

To see if there are differences in disclosure between large and small companies in a country, the small and large companies of each of the two countries were compared. A Wilcoxon (rank sum) test was used and the results are reported in Table 6. In both cases, significant differences were found in financial disclosure as well as in social, environmental, and labor issues. This supports the argument that the disclosure demanded from large internationally-oriented companies is different from that of smaller more domestically-oriented companies. Therefore, harmonization of worldwide financial reporting has to contend with these differences, as small companies may resist incorporating into national standards any international standards that add to disclosure requirements.

DISCUSSION AND CONCLUSION

Freilich (1989, p. 10) quoted Alvin Gouldner as saying: “In the primitive state of social science, the relevant question is not ‘Is X true?’ Rather, the relevant question is ‘Is X

interesting?'" The question of cultural context of human activities is very interesting and is relevant to financial reporting. However, Violet (1983) argued that accounting cannot be isolated and analyzed as an independent component of culture because it is influenced by other cultural customs, beliefs, and institutions. There is an infinite variety of cultural variables that could illustrate this influence. The fact is that within current methodologies of accounting research, we may not be able to capture the richness and complexity of the relationship between culture and financial reporting in specified causal relations that lend themselves to statistical manipulations. This inability should not lead us to either ignore the role of culture or to limit our studies to a narrow group of cultural variables that will not advance our understanding of the role of culture to the level to which we should aspire.

This paper proposed the use of a cultural analysis approach for the comparative study of financial reporting of different countries, and illustrated the approach using American and Dutch cultures. Further, it suggested a triangulation of methods by combining anthropological methods of description and interpretation of cultures, with hypothetico-deductive methods of formulating and testing financial reporting, but also to propose an approach to investigating the question.

The paper does not assert that culture is the only determinant of human action but, in agreement with Granovetter (1987), takes a middle of the road position between those who assume "rational and self-interested behavior affected minimally by social relations in one extreme," and those who assume that "behavior and institutions are completely constrained by social relations." It sees human behavior as rational within the context of culture that is dynamic and changing through interactions between its members and with outsiders.

Finally, whether or not one agrees with Hofstede's (1985) assessment that there is limited convergence between cultures and that cultural contacts tend to confirm each culture in its own identity, cultural differences are still substantial and require the attention of those dealing with cross cultural activities. Even proponents of cultural convergence theory agree that convergence is difficult (Freilich, 1989). Hence, a preferred short-term strategy may be that of harmonization of measurement and recognition, and reconciliation of disclosure.[6] This strategy is not an alternative to the long-term goal of complete harmonization of accounting standards. After all the current economic liberalization by many countries and the advances in communications and technology have increased the pace of globalization of business and capital markets. These developments may lead in the long-term to more convergence and harmonization. Rather the strategy is seen as a short-term one whose success may hasten the move toward complete harmonization of accounting standards.

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APPENDIX A
Large Dutch Companies and Matching American Companies

Pair No.	*Dutch*	*American*
1.	Unilever	Procter and Gamble
2.	Philips (Lamp)	General Electric
3.	Akzo N V	Eli Lilly
4.	Ahold	Flemming Cos Inc.
5.	Hoogovens	Bethlehem Steel
6.	Heineken	Adolph Coors
7.	KLM	Delta Airlines Inc.
8.	Royal Nedlloyd Group	Gatx
9.	Wessanen	International Multifoods
10.	Buhrmann-Tetterode	Gaylord Container Corp.
11.	HBG	Blount Inc.
12.	KBB	Dillard Department Stores
13.	Internatio Muller	Ametex
14.	Stork VMF	Allied Products
15.	Volker Stevin	Flour Corp.
16.	Gist Brocades	Lubrizol
17.	Hunter Douglas	Armstrong World Industries
18.	VNU	Banta Corp.
19.	Borsumij Wehrey	Service Mdse Co. Inc.
20.	Pakhoed Holding	Harper Group Inc.

Note: Median Revenues: American $2,177 million; Dutch $1,707 million

APPENDIX B
Small Dutch Companies and Matching American Companies

Pair No.	*Dutch*	*American*
1.	Holland Sea Search Holding N V	Georesources, Inc.
2.	Mulder Boskoop N V	Jaeger Industries, Inc.
3.	ICA Holding	Medar, Inc.
4.	Grand Hotel Krasnapolsky N V	The Big Two Resorts
5.	Union N V	Amistar Corporation
6.	Palthe N V	Goldtex, Inc.
7.	Goudsmit N V	50-Off Stores, Inc.
8.	Koppelpoort Holding N V	Valley Forge Corporation
9.	Aalberts Industries N V	Alloy Computer Products
10.	Nederlandsche Apparatenfabriek Nedap	Bel Fuse Inc.
11.	Ubbink N V	Thermal Industries Inc.
12.	Burgman Heybroek N V	Shopsmith Inc.
13.	Hollandia Kloos Holding N V	American Precision Ind.
14.	Koninklijke Landre & Glinderman	Welodtron Corporation
15.	IBB Kondor Groep N V	E A Engineering and Tech.
16.	Air Holland N V	Presidential Airways, Inc.
17.	Batenburg Beheer N V	DBA Systems, Inc.
18.	Automobiel Industrie Rotterdam	Valley Fair Corporation
19.	Multihouse	Data I/O Corporation
20.	Blyndenstein Willink	Papercraft Holding Corp.

Note: Median Revenues: American $38.2 million; Dutch $38.5 million

APPENDIX C
Summary of the Categories Used in the Analysis of Data*

MEASUREMENT

**B. Financial statement valuation basis
   1. Historical Cost
C. Accounting for long term investments
   4. Valuation method, equity securities
      a. Historical cost (equity, consolidation)
      b. Lower of cost or market (LCM)
   5. Valuation method, debt securities
      a. Present value of future cash flow (PVFCF)
E. Marketable securities
   1. Historical cost
   2. Lower of cost or market
F. Receivables
   1. Valuation basis
      a. Historical cost, net
      b. Historical cost, gross
   4. Long term receivables, face amount
G. Inventories (stocks)
   1. Historical cost (FIFO, LIFO or weighted average)
   2. LCM
   4. Retail method
H. Property, plant and equipment
   1. Historical cost
I. Depreciation Method
   1. Straight line
   2. Accelerated methods
   3. Sinking fund
J. Intangible assets (goodwill, patents, trademarks, etc.)
   2. Valuation method
      a. Historical cost
   3. Amortization method
      a. Straight line
K. Accounting for leases by lessor
   1. Operating leases
   2. Capital leases
      a. Direct financing
      b. Sale-type leases
L. Accounting for leases by lessee
   1. Capital leases
   2. Operating leases
M. Accounting for Research and Development
   1. Expensed
N. Accounting for Business Combination
   1. Purchase method
   2. Pooling of interest method

P. Notes Payable and Other Debt
  5. Measurement
  Short-term
    a. Historical cost
  Long-term
  PVFCF
Q. Foreign Currency Translation
  1. Temporal (monetary-nonmonetary)
  2. Current-noncurrent
AH. Revenue Recognition
  1. Realized
  2. Completed contracts
  3. Percentage completion
  4. Installment/cost recovery
AI. Accounting Changes
  1. Cumulative
  2. Retroactive
  3. Prospective

FINANCIAL DISCLOSURE***

Section One: Narrative
II. Economic Factors
III. Business Environment
IV. General Operating Environment
V. E. Consumer relation activities
VI. Others
  A. Auditor's Report
    1. Scope
    3. Standards/principles underlying certification disclosed

Section Two: Accounting Principles & Policies; and Related Disclosures
A. Discussion of accounting policies
B. Financial statement valuation basis
C. Accounting for long term investment
E. Marketable Securities
F. Receivables
G. Inventories (stocks)
H. Property, plant and equipment
I. Depreciation Method
J. Intangible assets (goodwill, patents, trademarks etc.)
K. Accounting for Leases by Lessor
L. Accounting for Leases by Lessee
O. Accounting for Pensions
P. Notes Payable and Other Debt
Q. Foreign Currency Translation
R. Foreign Currency Gain or Loss
S. Minority Interest
T. Contingent liabilities

U. Consolidation
Business Statistics (V,W,X,Y,AA,AB,AC,AD)
AE. Accounting treatment of Income Tax
AF. Segment Reporting
AG. Analysis of Shareholders and Share Performance
AH. Revenue Recognition
AI. Accounting Changes

Section Three: Financial Statements
A. Balance Sheet
Format
5. Cash
6. Marketable Securities
7. Receivables
8. Inventories
Other Current Assets (9,10,11,12)
13. Fixed Assets
14. Investments in Securities of Affiliates
15. Intangible assets
16. Current liabilities
17. Long term debt
20. Owners equity
B. Income Statement
Format
5. Sales (6)
7. Cost of Goods Sold
8. Operating Expense
9. Other Income
e. Income effect of changes in accounting principles
f. Minority interest
g. Earnings per share
h. Share of associated companies' profit before taxes
C. Statement of changes in financial position
[Cash method]
Format
4. From operations
5. Other sources
6. Applications of Funds
7. Net increase in cash and cash equivalents
[Working Capital Method]
1. Beginning working capital
2. Sources of working capital
3. Uses of working capital
4. Increase/decrease in working capital
5. Ending working capital
D. Statement of cash flow (Alternative to C)
1. Cash from operating activities: [Direct method]
2. Cash from operating activities: [Indirect method]

3. Cash flow from investing activities
4. Cash flow from financing activities

SOCIAL, ENVIRONMENTAL AND LABOR ISSUES***

Section One: Narrative

V. Social Environment and Labor Issues
   A. Political Factors Discussed
   B. Social Responsibility Activities Discussed
   F. Information on Labor Relations
   Z. Reporting of distribution of value added

Notes: * Not all items in the "Disclosure Index" were included in the analysis

** The numbering used in the "Disclosure Index" is kept here to facilitate cross referencing.

*** Since each highlighted sub-category has a different number of items, items disclosed within each sub-category were scaled into percentages.

NOTES

1. Harmonization in international accounting standards is defined as the move from diversity towards uniformity in accounting standards by eliminating differences.
2. While many of these issues affect cash flows, many investors are interested in them because of their impact on society and in many cases such investors opt for lower returns from what they consider to be socially responsible corporations.
3. The study was limited to annual reports because cultural differences are expected to be reflected on all forms of financial reporting. Moreover, interim reporting requirements differ between the two countries. In the U.S. quarterly reports are required, while in the Netherlands semi-annual reports are required. In The Netherlands there are no reports such as those required by the SEC.
4. Shell was excluded because it followed both Dutch and British standards. Schuitema and Elsevier were excluded because they did not provide English versions of their complete reports. Oce and several small companies were excluded because no appropriate matching companies can be found.
5. A copy of the disclosure index can be obtained from the author.
6. Several approaches to reconciliation were suggested (see Beresford, 1990). One approach is to provide financial statements based on home country standards with a reconciliation to IASC required or preferred standards. For such a scheme to be successful, the measurement and recognition criteria must be reliable. One of the goals of the IASC exposure draft E32 on comparability of financial statement is to create such reliability.

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Auditors' Ethical Reasoning: Some Audit Conflict and Cross Cultural Evidence

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Key Words: Audit Conflict, Ethical Behavior, Ethical Reasoning, Culture

Abstract: *This study examines the relationship between different levels of ethical reasoning and ethical behavior of Hong Kong auditors in an audit conflict situation. It tests the hypothesis that ethical reasoning scores for Hong Kong auditors will be lower than USA auditors on the basis of Hofstede's theory of cultural differences. Fifty experienced auditors from four Big Six CPA firms in Hong Kong who were administered the Defining Issues Test (DIT) participated in an experiment requiring them to make a decision on an auditor-client conflict situation. It was found that the higher the level of ethical reasoning, the lower the likelihood that the auditor would respond as acceding to the client's request. Higher levels of ethical reasoning were thus associated with more independent behavior. It was also found that P scores were significantly lower than the sample in USA thus suggesting that cultural differences could affect levels of ethical reasoning.*

Ethical concerns in the accounting profession have recently attracted much research interest (Loeb, 1970; Armstrong, 1984; Ponemon, 1990; Shaub, 1992). In particular, a significant strand of research in this area focuses on the factors that could affect ethical behavior of professional accountants (Shaub, 1989; Ponemon, 1990; Ponemon and Gabhart, 1993). In examining these factors, it is imperative to probe into the cognitive process (Ponemon, 1990, 1992a, 1992b; Ponemon and Gabhart, 1990). Therefore, recent studies have attempted to "incorporate or expressly consider a psychological framework for the ethical reasoning process" because the latter was found to be useful in answering the question *what makes accountants more or less ethical?* (Jones and Ponemon, 1993, p. 411). These studies that explicitly recognize accountants' levels of ethical reasoning (Jones and Ponemon, 1993, p. 412):

> corroborate the importance of ethical reasoning as a determinant of judgment, behavior and action in the practice of accounting and auditing.

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An important strand of auditing literature which may benefit from the study of the role of ethical reasoning is the client-management audit conflict. Audit conflict situations invariably provide an important source of ethical dilemma situations that auditors would face (Knapp, 1985; Gul, 1991). In particular, the problem and issue of the auditor's ability to resist management pressure in an audit conflict situation have been a recurring theme in the auditor independence literature (Knapp, 1985; Gul, 1991). For example, numerous prior studies have investigated the effects of different contextual variables, such as the client's financial condition, size of audit fees and management advisory services, on the auditors' ability to resist management pressures in audit conflict situations (Knapp, 1985, 1987; Gul, 1991; Gul and Tsui, 1992). Whether auditors' different ethical reasoning levels affect their ethical decisions in the context of auditor-client audit conflict situations have, however, not been studied. This study, therefore, examines the relationship between the auditors' different levels of ethical reasoning and their behavior in an audit conflict situation.

This paper also examines whether ethical reasoning levels of auditors are different depending on cultural contexts. This extension, which is based on Hofstede's (1990) cultural theory, is motivated because most ethical reasoning studies of auditors have been conducted in the USA and Canada. Given cultural and economic environmental differences between USA and Asian Pacific countries, these North American studies may not be generalizable to the Asia-Pacific environments, in particular, Hong Kong. Empirical evidence suggests that auditors in different countries may have different ethical perceptions and standards (Cohen, Pant and Sharp, 1993; McKinnon, 1984; Gul and Tsui, 1993). This view is supported by Hofstede's (1991) culture theory which suggests that differences in individuals' attitudes and behavior across nations are the result of differences in five cultural dimensions. These five dimensions are: large versus small power distance, strong versus weak uncertainty avoidance, masculinity versus femininity, collectivism versus individualism, and long term versus short term orientation. In particular, the three cultural dimensions of power distance, individualism, and long term orientation are found to be relevant in distinguishing differences in accounting behavior between North American and Hong Kong Chinese managers (Hofstede, 1991; Gul and Tsui, 1994). The differences in cultural environments thus give rise to two research issues for this study. First, does ethical reasoning theory affect ethical behavior in different national cultural environments? This issue will be examined by evaluating the relationship between ethical reasoning and auditors' behavior in an audit conflict situation in Hong Kong. Second, are there differences in the ethical reasoning levels of auditors in the USA and Hong Kong? If so, does cultural theory (Hofstede, 1991) provide an explanation for the differences? Answers to these questions may help us evaluate and explain the differences on auditors' ethical reasoning levels across different national settings. Cohen et al. (1993) summarize the importance of this type of research in the following words:

> A systematic knowledge of the differences in professionals' ethical sensitivities and the way ethical choices are made would be invaluable for formulating guidelines for a firm-wide ethical policy. It also could provide international firms with a framework with which to identify potential ethical problem-areas in specific countries (p. 1).

The aims of this study are twofold: to examine the effects of ethical reasoning on Hong Kong auditors' behavior in an audit conflict situation, and to explore the notion

that there will be differences in the levels of ethical reasoning due to cultural differences. For this purpose, the ethical reasoning scores of a sample of Hong Kong and USA auditors are compared. This paper is organized as follows: the next section develops the first and second hypotheses based on Kohlberg's Theory of Cognitive Moral Development and Hofstede's Culture Theory respectively. This is followed by a section on the methodology of the study and then concludes with a discussion of results section.

HYPOTHESIS BASED ON KOHLBERG'S THEORY OF COGNITIVE MORAL DEVELOPMENT

Kohlberg's (1969) widely accepted work in the study of the cognitive process of moral reasoning, known as the Theory of Cognitive Moral Development (CMD), forms the theoretical basis in examining the cognitive process in this study. This theory aims to explain the human *decision making process* in influencing ethical behavior. Essentially, the focus is on the cognitive decision making process as to the reasons why individuals justify a particular ethical choice.

Kohlberg (1969) posits a stage sequence model in identifying different cognitive levels of ethical[1] reasoning. This model is based on the assumption of cooperative social organization, i.e., one's relationship to society, society's moral rules and expectations on the basis of justice and fairness. The individual formulates ethical judgments depending on which stage they are at with respect to the different levels of socio-moral development (Table 1). In confronting a conflict situation which elicits ethical judgments, individuals would normally invoke their basic conceptions of social cooperation and notions of fairness in judging what is right or wrong. At the pre-conventional levels, individuals would do right by focusing only on the self without regard for others. For individuals at the conventional level, the focus is on one's personal relationship to others in society. At the post-conventional level of ethical development, an individual follows their own self-chosen principles to guide judgment in order to be morally right.

A number of empirical studies have examined the ethical reasoning levels of professional accountants using Kohlberg's CMD theory (1969). Armstrong (1987) and Ponemon (1988) found a deficiency in the ethical development of those who enter and remain in the accounting profession. Specifically, Armstrong (1987) found USA CPAs' ethical reasoning levels have not matured to the levels comparable to college graduates. This suggests that college education may not have raised their ethical reasoning levels. To explain this phenomenon, Ponemon (1988) posited that this deficiency may be due to the characteristics of the accounting curriculum. It may also be due to the accounting profession itself preventing an individual from developing an increasing sense of ethical beliefs during their education or career. Other empirical findings also suggest that professional accountants do not develop levels of ethical reasoning equivalent to those who are in similar socio-economic and educational backgrounds (Tull, 1982; Ponemon 1990, 1992a, 1992b; Shaub, 1989; Ponemon and Gabhart, 1990, 1993; Ponemon and Glazer, 1990; Arnold and Ponemon, 1991; Hiltebeitel and Jones, 1991, 1992; Lampe and Finn, 1992).

Ponemon (1990) reported a negative relationship between accountants' positions or ranks in the firm and their levels of ethical reasoning. The higher the accountants' ranks, the lower the levels of ethical reasoning. This suggests that different positions or ranks

Table 1. Six Stages of Moral Reasoning

Pre-Conventional Level	
Focus is self.	
Stage 1:	Obedience: You do what you are told primarily to avoid punishment.
Stage 2:	Instrumental egotism and simple exchange: Let's make a deal or only consider the costs and/or benefits to oneself.
Conventional Level	
Focus is relationships.	
Stage 3:	Interpersonal concordance: Be considerate, nice and kind and you'll get along with people. Focus is on cooperation with those in your environment.
Stage 4:	Law and duty to the social order: Everyone in society is obligated and is protected by the law. Focus is on cooperation with society in general.
Post-Conventional Level	
Focus is personally held principles.	
Stage 5:	Societal consensus: You are obligated by whatever arrangements are agreed to and by due process and procedure. Focus is on fairness of the law or rule as determined by equity and equality in the process of developing the rule.
Stage 6:	Nonarbitrary social cooperation: Rational and impartial people would view cooperation as moral. Focus is on fairness of the law or rules derived from general principles of just and right as determined by rational people.

Source: Adapted from J. Rest (1979).

in the firm's hierarchy are likely to elicit different ethical inclinations which result from differences in socialization (Ponemon, 1990). In another study, Ponemon and Gabhart (1990) found auditors with lower levels of ethical cognitive development to be more sensitive to factors relating to penalty than to affiliation in making independent judgments. Ponemon's (1992b) study also found that the incidences of auditors' underreporting to be related to their different levels of ethical reasoning. Auditors with lower *P* scores underreported their chargeable time much more severely than those with higher *P* scores.

The above reasoning suggests that the different levels of ethical reasoning of auditors would affect their responses in acceding to their client's request in an audit conflict situation. More specifically, auditors with higher *P* scores would be less likely to accede to the client's request in an audit conflict situation thus suggesting the following hypothesis:

> **H1**: *The higher the P score, the less likely that the auditor would respond as acceding to the client's request in an audit conflict situation.*

HYPOTHESIS BASED ON CULTURE THEORY

Culture can be defined as the "collective programming of the mind which distinguishes the members of one human group from another" (Hofstede, 1980). It reflects typical behavioral characteristics such as values, customs, beliefs and expression of norms (Takatera and Yamamoto, 1987; Gul and Tsui, 1993). Culture theory is considered as a powerful environmental factor that would not only affect the accounting system of

a country but also influence the way the individuals process information. It is also recognized that cultural differences would manifest themselves in how auditors from different societies make audit decisions and respond to ethical dilemmas.

Hofstede (1991) identified five cultural dimensions based on his two empirical studies (1980, 1991) on managerial attitudes and behavior covering 40 countries and 60 countries respectively. Perera (1989) noted that the researcher needs to select the most pertinent cultural dimension(s) to explain the particular facet of behavior under study. Since the research reported here compares the differences in ethical reasoning levels of auditors in the USA and Hong Kong, the pertinent cultural dimensions that distinguish these two countries are long term orientation, power distance, and individualism. Long term orientation represents the idea of Confucian dynamism which consists of the following values: persistence, thrift, having a sense of shame, ordering relationships by status, and observing this order (Hofstede, 1991). Power distance is defined as the degree of inequality among people and individualism is defined as the extent to which individuals are expected to look after themselves and their immediate families (Hofstede, 1991). A comparison of these three cultural dimensions between USA and Hong Kong shows these two countries to be different in their respective scores and relative ranking (Table 2). USA is ranked as being small power distance, short term orientation, and high individualism, whereas Hong Kong is classified as large power distance, long term orientation, and low individualism. On the basis of these cultural differences, it is posited that the ethical reasoning levels in terms of *P* scores should also be different.

Since ethical reasoning is measured and premised on the basis of justice and fairness (Kohlberg, 1969), this concept is suggested to be consistent with individualism, small power distance, and short term orientation. A higher level of ethical reasoning can be interpreted to be consistent with the dimension of individualism as the post-conventional level focuses on personally held principles. Thus, collectivism is seen to be incompatible with the personally held principles of the highest level of post-conventional ethical reasoning. The cultural dimension of small power distance which is characterized by more equal relationships among people is congruous with the highest levels of ethical reasoning: social justice and personally held principles. Since USA is classified by Hofstede (1991) as relatively low on the dimension of power distance, it is expected that the auditors' levels of ethical reasoning be comparatively higher. As short term orientation exemplifies the characteristics of personal steadiness and stability, saving face, respect for tradition, and reciprocation of greetings, favors, and gifts, it is commensurate with higher levels of ethical reasoning which focus on societal consensus

Table 2. A Comparison of Relative Ranking of USA and Hong Kong on Power Distance, Individualism and Long Term Orientation

Power Distance			*Individualism*			*Long Term Orientation*		
Ranking	*Country*	*PDI Score*	*Ranking*	*Country*	*IDV Score*	*Ranking*	*Country*	*LTO Score*
15/16	HK	68	37	HK	25	2	HK	96
38	USA	40	1	USA	91	17	USA	29

Source: Hofstede (1991).

consensus and social cooperation. Therefore, it is posited that auditors in the USA, characterized by the three pertinent cultural dimensions: small power distance, short term orientation, and high individualism, would have higher *P* scores than auditors in Hong Kong, with large power distance, long term orientation, and low individualism. Thus, the above reasoning leads to the following hypothesis:

H2: *Hong Kong auditors will have lower P scores than USA auditors.*

METHODOLOGY

To test Hypothesis 1, a field experiment was conducted. The research instrument was administered in the offices where the subjects work. Auditors with professional qualifications and at least four years of audit experience[2] are included in the sample because the task in this field experiment required experienced auditors to make a decision on an auditor-client conflict situation. It was difficult to select the subjects by random sampling since the entire research instrument required subjects to devote approximately 40 minutes to complete the exercise. Therefore, the contact managers/ partners in each of the four CPA firms were approached to select randomly qualified subjects in their firms to participate in this field experiment. The sample subjects for Hypothesis 1 came from four Big Six CPA firms in Hong Kong.

A sample size of 50 experienced auditors who are either partners or managers participated in the study. All subjects are qualified professional accountants. The mean age of the subjects is 31.02 (range from 27-47) and the mean auditing experience is 8.56 years (range from 4-28). A pilot test on the research instrument with eleven academics who are professional accountants and had prior auditing experience as well as ten experienced auditors was conducted prior to the field experiment.

To test Hypothesis 2, a sample of 127 USA auditors[3] from a previous study conducted by Shaub (1994) was selected for comparison with the sample of 50 Hong Kong auditors.

Measurement of Variables

The well accepted[4] Defining Issues Test (Rest, 1986) is used to measure the subjects' cognitive moral development levels.[5] Rest's (1979) DIT is recognized as an appropriate surrogate to measure the relative importance on Stages 5 and 6 of Rest's moral reasoning (Table 1).

The DIT requires participants to analyze six hypothetical ethical dilemmas and rank order those items that are most significant in influencing the resolution of each dilemma. A weighting of the scale, from 4 points being the most important to 1 the least important, is given when the subject ranks from the most important question to the least important one. The *P* score, being expressed as a continuous percentage from 0 to 100, is used to measure the relative importance the participants give to moral considerations, i.e., aggregating the weightings given to questions in Stages 5 and 6. However, a four story version is used for Hypothesis 1 of this study because the other two stories are considered too specific for Western cultures (Ma, 1988).

To check for internal consistency, the DIT scoring procedure includes an M (meaningless) score which indicates the extent to which the subjects select items that are lofty sounding but meaningless. As a rule of thumb, Rest (1993) stated that data obtained from

subjects with an M score equal to or greater than eight for the six-story version should be eliminated from analysis. An M score of five would be the cutoff point for elimination from the analyses since a four-story version of the DIT was used. Other measures such as consistency in ranking the items, and those who failed the cutoff were eliminated from the sample for analysis purposes (see Rest, 1993 for more theoretical justifications).

To obtain data for Hong Kong auditors, the first component of the research instrument consists of a Social Opinion Survey (DIT). The subject was given four cases and was requested to decide on what one should do after each case. Upon a decision made in each case, the subject was asked to rate the importance of each of the twelve statements given after each case in making the initial decision. The subject was also requested to rank the four most important statements. Subjects were administered the English version of the DIT even though their first language (in most cases) would not be English. It is considered appropriate in these circumstances because these subjects are qualified accountants and are well versed in English.[6]

The second component of the research instrument for Hong Kong auditors is entitled the Auditors' Decision Making Questionnaire. To evaluate the auditors' responses to the audit conflict, subjects were presented with an auditor-client conflict situation based on the case developed by Knapp (1985) and used by Gul (1991) to study the ability of the auditors to resist the client's pressure in such conflict situations. In the case, the auditor disagrees with management on the materiality of certain unrecorded liabilities. The subject was requested to role-play as the auditor of the company and indicate the likelihood of ignoring the unrecorded liabilities.

A continuous scale from 0-100% is used to measure the extent to which the auditor will ignore the unrecorded liabilities as management had recommended. The lower the likelihood that the auditor will ignore the unrecorded liabilities, the lower the extent that the auditor will accede to the client's request and the more independent is the auditor. Conversely, the higher the likelihood that the auditor will ignore the unrecorded liabilities, the greater the extent that the auditor will accede to the client's request, the less independent is the auditor.

To assess whether the auditor has previously encountered similar auditor-management situations, the participant was asked to indicate whether they had experienced similar situations and to describe the one that was most memorable. A copy of the adapted case is given in Appendix A. The research instrument used for the USA auditors to test Hypothesis 2 is the three-story version of the Defining Issues Test.[7]

Data Analysis

Linear regression and t test are used as the methods of analysis for **H1** and **H2** respectively. To test for the relationship in **H1**, the following linear model is employed:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$

where Y = Auditors' response to accede to the client's request
X_1 = Ethical reasoning score
X_2 = Number of years of experience
X_3 = Gender

H1: $\beta_1 \neq 0$

Table 3. Descriptive Statistics for Variables in the Model

Variables		*Mean*	*Standard Deviation*	*Range*
Ethical Reasoning (ER)	X_1	30.10	14.87	2.5-67.5
Experience (EXP)	X_2	8.56	4.65	4.0-28.0
Gender (GEN)	X_3	—	—	—
Auditor's Response (AR)	Y	24.60	23.77	0.0-90.0

Two variables, number of years of experience (X_2) and gender (X_3) are added to the linear model to control for their possible confounding effects on the dependent variable (Kleinbaum, Kupper and Muller, 1988). Table 3 presents the descriptive statistics for the variables in the model. To test for the relationship in Hypothesis 2, a t test is used to compare the mean scores for Hong Kong and USA auditors.

DISCUSSION OF RESULTS

The results in Table 4 support the directional hypothesis that the greater the *P* score, the less likely that the auditor would respond as acceding to the client's request (negative coefficient value). It means that the higher the ethical reasoning level, the less likely that the auditor would accede to the client's request in an audit conflict situation. Inference can be made as to the extent to which the auditor is or is not independent. Such an indirect measure of auditor independence is documented in the literature (for example, see Knapp, 1985). Therefore, one can infer from the above evidence that the higher the ethical reasoning, the more likely it is that the auditor will be independent in an audit conflict situation. It was also found that years of experience and gender had no effects on the dependent variable. These findings are consistent with earlier studies concluding that there is a systematic and important positive correlation between individuals' levels of ethical reasoning and ethical behavior (Brabeck, 1984; Ponemon, 1992b).

Since independence is a crucial concept in the accounting profession's Code of Professional Conduct in the USA, UK, Australia, Hong Kong, and other countries, this finding has important implications concerning ethical behavior of the members of the accounting profession. Educators should be encouraged to undertake research on how different types of ethics intervention can promote ethical reasoning. With higher ethical reasoning levels, the accounting profession can be assured that professional

Table 4. Summary Results of Linear Regression for Main Effects on the Dependent Variable

Hypothesis Number		*Variable*	*Coefficient Value*	*Standard Error*	*Sigificance P*
H_1:	X_1	Ethical Reasoning	-0.23	0.23	*
	X_2	Experience	-0.23	0.73	NS
	X_3	Gender	-0.03	7.70	NS
	$R^2 = 6.6\%$				

Note: * Significant at $p < 0.10$

Table 5. Comparisons to DIT *P* Score Norms

	Hong Kong	*USA*
Number of subjects	50	127
Mean Score	30.10	39.2
Standard deviation	14.87	15.24

Note: $t = 3.60$ ($p < 0.01$, one-tailed).

will act independently in auditor-management conflicts. This will be a right step toward promoting higher ethical standards of the members of the accounting profession.

The findings from Table 5 also provide additional cross-cultural evidence on the issue of ethical development of auditors. In general terms, it confirms that the theory of ethical reasoning has application in a different cultural environment. However, the analysis of the *P* scores provides some interesting insights. As seen from Table 5, the mean *P* score for the sample of auditors in Hong Kong is significantly lower than their counterparts in the USA ($p < 0.01$). The fact that the average *P* score for Hong Kong auditors is significantly lower than the average score for USA auditors suggests that such differences can be explained in terms of the different dimensions of culture as postulated by Hofstede (1991). These differences in *P* scores are the result of the different collective attitudes and perceptions of accountants from various socio-economic environments. In the USA, the higher *P* scores for the sample of USA auditors are characterized by pertinent cultural dimensions of small power distance, short term orientation, and high individualism which are commensurate with the basic underlying premises of higher ethical development of Kohlberg's CMD: fairness and justice. In Hong Kong, the lower *P* scores for Hong Kong auditors are consistent with large power distance, long term orientation and low individualism.

Recently, Cohen et al. (1993) have emphasized that guidelines for a firm-wide ethical policy should explicitly consider the possible influence of international cultural factors on ethical perceptions. The evidence from this study gives further support to the findings of Ponemon's (1990) and Ponemon and Gabhart's (1990) studies that on average, partners' and managers' ethical reasoning levels may not represent the highest levels in Kohlberg's stage sequence model in different socio-economic environments. Limitations of this study include the non-random selection of subjects and that Hong Kong subjects are employed by only the Big Six firms. Generalizing the results to other subjects and settings should be viewed with caution.

CONCLUSION

This study investigated the effects of ethical reasoning on the auditors' responses in acceding to the client's request in an audit conflict situation and the cross-cultural explanations for the differences in levels of ethical reasoning. Using linear regression, the results showed that ethical reasoning is a major determinant in explaining the variability in the auditors' responses in such conflict situation. In addition, the mean ethical reasoning *P* score obtained in a non-western context is found to be significantly lower than the USA sample obtained in previous study. This can be explained by significant differences in cultural dimensions. Many accounting researchers have urged that multinational public accounting firms need to consider the impact of cultural

factors on their employees' ethical sensitivity and ethical decision making. It has been suggested that an awareness of such cultural differences could ensure that the reward or compensation system in CPA firms be consistent with cultural differences so as to ensure individuals' ethical behavior (Cohen et al., 1993). It is only with such integration of cultural issues within the firm's control system that ethical standards could be maintained at an international as well as national level. Otherwise, accountants' reputation and credibility would be at stake. The results from this study add further evidence to the literature of ethical reasoning in an accounting context in a non-western cultural environment. Future research could consider testing culture as a variable in an empirical ethical decision making model.

Acknowledgment: The author is grateful to comments given by John K. Courtis, Ferdinand A. Gul, Bertrand Horwitz and Bikki Jaggi.

APPENDIX A
AUDITORS' DECISION MAKING QUESTIONNAIRE

This questionnaire is part of a research project which aims to identify and examine some of the factors that could affect auditors' decision making. Note that there are no right or wrong answers to these questions which merely ask for your own perceptions on a range of issues. We appreciate that normally you would require more information than is provided here before you make such decisions. However, for purposes of this study, we ask you to make your decisions based on the limited information provided. Please be assured that the questionnaire is anonymous and the information obtained will be kept strictly confidential. None of the information collected is sufficiently detailed to identify you or your firm.

AUDIT DECISION

Assume That You Are the Auditor of Dayson Development Ltd.

Dayson Development Ltd. is a Hong Kong manufacturer specialising in electronic toys. In the current year's audit, a dispute has arisen between you and the management of Dayson over the materiality of certain unrecorded liabilities discovered by you during the audit. Dayson's Chief Financial Officer argues that the total amount of unrecorded liabilities is immaterial and therefore it is unnecessary to make adjusting entries in the financial statements. Dayson's management believes that it should know as well as anyone what financial statement readers would or would not deem to be a material amount. In your opinion, the amount is material and adjustments should be made in the financial statements.

1. As the auditor, how likely is it that you will IGNORE the unrecorded liabilities? Please indicate your choice by marking with an **X** on a specific point on the following scale.

0 10 20 30 40 50 60 70 80 90 100

Very low likelihood — Very high likelihood

2. As the auditor, have you encountered cases that are similar to Q. 1 above in which you were involved in an audit conflict situation with client management?

YES ☐, If so, please indicate approximately how many cases? ____________

Please describe briefly the most memorable audit conflict case which you have encountered. ________________________________

____

____

NO ☐

NOTES

1. The word "ethical" is used interchangeably with "moral" in this study.
2. The contact partners/managers of CPA firms who participated in this experiment confirmed that auditors with at least four years of audit experience in Hong Kong would normally handle auditor-client conflict situations.
3. Shaub's (1994) sample of 127 auditors came from four offices of a single Big-Six CPA firm in southwestern U.S.A. No significant differences in *P* scores were found among the four offices.
4. The DIT has been validated in over 500 studies in every state in the U.S.A. and from over 20 countries outside the U.S.A. Test-retest reliability is generally in the high .70s or .80s. Alpha Cronbach is also in the high-70s as well. Rest believes that Alpha Cronbach should be considered a lower bound to reliability rather than an estimate because the stories are factorially complex and are not equivalent across them. Rest (1979) has also validated the DIT in a number of ways including predictive validity (pp. 96-97), face validity (p. 98), criterion group validity (pp. 107-126), longitudinal change studies (pp. 126-145), convergent-divergent validity (pp. 146-200), experimental enhancement studies (pp. 204-214) as well as discriminant validity (pp. 201-203).
5. The Moral Judgment Interview developed by Colby and Kohlberg (1987) is also recognized as one of the very reliable and valid instruments to measure cognitive moral development. However, the DIT is adopted because it is an objective recognition instrument which is considered more scientific, valid, and reliable.
6. Those participants who can understand Chinese are given the translated Chinese version (Ma, 1988) as a reference.
7. Rest (1986) found that the three-story version has a very high correlation with the six-story version though the shorter version has a slightly lower reliability level. The more stories being used, the higher the reliability.

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Book Reviews

Accounting's Changing Role in Social Conflict *by Cheryl R. Lehman, Marcus Wiener Publishing, New York, 1992, 174 pp. $34.95*

Cheryl R. Lehman, in her short (152 pages of text) analytical review of the discipline of accounting, its canons, and its role in society, portrays the field as an endeavor with a vision and a mission. It is not just a "technique," a tool to be picked up and used whenever convenient and laid aside when not.

As she states, "This book is an act of revenge for the hours spent learning conventional accounting." Accounting, for all intents and purposes, is the record of businesses being born, living, maturing, and dying. It, as the language of business, is the vehicle for transporting ideas from one business's inventory to the next. Her "revenge" seeks to challenge not only the conventional philosophy and rhetoric of accounting, but also to expound upon the view that accounting is a "discourse, a form of social signification, and a mode of adjudicating wealth conflicts."

Accounting professionals do, indeed, have callings in society; and in chapter 1, she expresses this openly as the pioneering effort to create and innovate "regulatory practices for advancing shareholder interests and promoting economic efficiency" although most accounting practitioners and theorists have been reluctant to respond to that challenge. Before posing her major thematic questions, she discusses accounting and some of its environmental debts on an international basis. To many market theorists, accounting is irrelevant just because it is historical; it deals with the past and not the present nor the future. To others, though accountants have access to privileged information, they are seen as glorified "data crunchers." What they do has little social significance. What then is the impact of accounting on bank accounting practices, the staggering record of international and intercorporate debts, and the challenges to the business worlds of mergers and consolidations?

Her introductory chapter ends by focusing on two key questions, "what is the nature of social conflict in society?" and "what part does accounting play in social struggles?" These are not the questions that accountants usually raise. If accounting is to have both a vision and a mission, its research efforts must begin expanding into the area called *behavioral accounting*. If we accountants and auditors do not come to grip with these important questions and ideas, we may find ourselves "abdicating our responsibilities." What, after all, is good stewardship of assets, liabilities, or equities if the companies, organizations, or countries given a "clean audit report," can neither collect outstanding loans nor receive cash as income earned? Consequently, it would then become just a tool or a child's game signifying nothing of any importance to anyone.

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Chapter two presents an overview of the conventional prongs of accounting. The "equity" prong of accounting's fork was established in the 1890s; accountants were seen as protectors of "shareholders" from the greed and crimes likely to be perpetrated by managers getting their hands on money they did not own. Audits were essential to keep managers from absconding with funds or missing them. Financial reports existed to demonstrate the "true equity" of the shareholders. In 1973, the "efficiency" prong was established; here, accountants were summoned by managers to help them forge "efficient" allocations of resources. But now she asks the hard question, "which 'stakeholders' do accountants serve, the 'shareholders' or the 'managers'?" And more importantly, is this a "real" conflict of interests or only an "apparent" one?

Chapter three explores the nature of accounting knowledge or wisdom. Even though much of accounting epistemology deals with accounting as a "positivistic" science, the author correctly indicates that logical positivism is no longer taken seriously in other fields of endeavor. She then notes that many accounting researchers disregard or confuse philosophical issues and perspectives. Accountants are participants in the processes they study, are they not? Then, how is it possible for them to observe, record, and theorize about accounting events without involving their entire being? Lehman, hence, argues that there are two current theories of accounting epistemology—"positive" accounting with its emphasis on creating a *value-free, objective, and factual* record and a "critical theory," where accounting researcher embeds itself in its sociocultural fabric. It is the former that she calls barren; and the latter, fruitful.

Chapter four sets forth her thesis that *accounting is an active factor resolving the questions of the distribution of social wealth and income.* Differing forms of society—band, tribe, chiefdom, agricultural state, and industrial state—cannot rely on the same forms of accounting information. Just as economic resources differ, so do the factors of production, distribution, and consumption. Social wealth and income could not and did not mean the same to a feudal lord as it does to a modern industrial capitalist. She questions the difference between real "accounting knowledge" of a firm and its ideology (i.e., "window dressing") and what the vision and mission of accounting are as far as a content analysis of its literature contends.

Chapter five continues the assault on the ideology of "conventional accounting" by closely examining the findings of the content analysis of the literature which the author introduced in chapter four. Chapter five is a greatly detailed elucidation of the trends and the major journals espousing those trends. For example, "social accounting" and "social audits" grew out of the ethical reforms of the 1960s; and as such, they retained the traditional accounting ideology. Nonetheless, "social accounting" was not part-and-parcel of "accounting proper," for it dealt with events external to the business and the concerns of stockholders and managers alike, precisely as the author states, because it was properly pigeon-holed as "social." Likewise, she argues that "accounting ethics" is somehow something alien from "standard accounting."

Chapter six completes her present agenda by contending that the accountant or auditor is the protagonist involved in deciding with whom social equity lies and why. Just as designating which colors are which does not depend on *factual* identification with specific areas of a rainbow, but rather upon cultural traditions and linguistic conventions: people classify accounting events as "profits" or "losses" depending on a cultural background and linguistic mechanisms for deciding the semantics (or meaning) of the terms. Anthropologists have, after all, shown that outsiders' interpretations (i.e., "ETIC" interpretations) do not correspond to the views of the insiders (i.e., "EMIC" interpretations).

The author seriously questions how accountants can really be *impartial* judges of the accounting interests they serve and, accordingly, what future exists for accounting. Conflicts over "income distribution" pervade modern accounting. The role of accounting in social conflict and in society is changing though many an accountant or auditor does not seem to know it.

In summary, the author has made an impassioned plea for accounting practitioners, theorists, and researchers to recognize both the importance of "critical theory" to future research, standard setting and practice, and the need for accountants and auditors to be *responsible* and *publicly accountable.* Readers from any of these accounting perspectives—practice, theory, or research—can gain from seriously digesting what Cheryl R. Lehman has to say. She does give the "socially unadept" reader sufficient background as to the bases of what she presents and her chapter endnotes and list of references are excellent. The book deserves to be read for its international implications, as well as its implications for U.S. accounting practices and research. Accounting is, after all, not just a tool for business, but it is its whole "linguistic" reality. Furthermore, accounting research must be tied to the sociocultural milieu from which it has sprung.

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The Future Shape of Financial Reports, *edited by John Arnold, Paul Boyle, Anthony Carey, Malcolm Cooper, Ken Wild, The Institute of Chartered Accountants in England and Wales, and The Institute of Chartered Accountants in Scotland, 1991*

This report is a joint endeavor by the Institutes of Chartered Accountants in England and Wales and Scotland. A blueprint for timely reform in financial reporting, the report recommends specific changes in the nature of financial reports and should simulate experimentation towards that end.

Financial reporting has been criticized for failing to offer relevant information. This report sets forth recommendations to address that criticism. In so doing, its suggestions are applicable not just to the U.K., but to many other countries as well. In the U.S., the Jenkins Report (1994) of the AICPA has recently been issued, providing similar recommendations for enhancing the usefulness of financial reports.

The principal findings and recommendation of this study are:

1. Financial reports should be "user driven."
2. Contemporary financial reporting is deficient because:
   a. it largely reflects historical costs, not current values.
   b. it places too much emphasis on bottom-line net income.
   c. not enough attention is given to cash and liquidity.
   d. it does not look forward, but rather backward.
   e. the accent is on legal form, not economic substance.
3. A better financial reporting package would include:
   a. a statement of objectives and strategies;
   b. a statement of assets and liabilities;
   c. an income statement;

   d. a gains statement;
   e. a cash flow statement; and
   f. information on future prospects.
4. Assets and liabilities should be valued in an eclectic fashion.
5. The statements would reflect information currently used by effective managements.
6. Independent auditors would continue to play a major role.
7. Experimentation with the proposed statements is recommended.

The structure of the report is as follows. Chapter 1 focuses on the specific need for reform. Fundamental changes are required in the financial statements to serve two main functions:

1. "to provide information to shareholders, lenders and others to appraise past performance in order to form expectations about an organization's future performance and hence to inform their decisions concerning their relationships with the organisation." (p. 4)
2. "to enable the enforcement of contracts, the terms of which include reference to accounting information." (p. 4).

Chapter 2 deals with users' needs and how financial reports could be molded to better accommodate those needs. Decisions that users make with financial reports are considered, emphasizing their future orientation. There is a compelling need for information of past, current, and future events. The new financial statements proposed in this report are intended to cover those three events.

Chapter 3 considers specific weaknesses in financial reporting and how to alleviate them. Current valuation is recommended for performance evaluation and decision making purposes. However, no one valuation approach is proposed because none will satisfy all needs. Monetary assets should be valued at expected discounted receipts. Current cost or net realizable value is appropriate for inventories, and most property, plant, and machinery. That is not true for highly specialized assets or various intangibles, which may be valuable to the firm but have no significant value to other parties. Chapter 3 calls for experimentation with the valuation of such specialized and intangible assets.

Chapter 4 describes the contents of the new financial statements proposed earlier. The statement of objectives should reflect the goals and strategies of management. The second statement sets forth assets and liabilities, grouping items by type or by certainty of valuation. The income statement would deal solely with operating activities. A separate statement would be prepared to provide realized and unrealized holding gains. A cash flow statement is also proposed to accentuate the importance of cash to the survival of the firm. Finally, a statement of future prospects deals with future projections of the statements of assets and liabilities, income, gains, and cash flow. Also, a comparison of actual results with previous forecasts is recommended. Chapter 5 stresses the importance of changes in the structure of financial reports. Research is suggested on such issues as: deprival value; the level of asset aggregation for valuation purposes; the reaction of capital markets to current values; and evaluating share price prediction from elements of financial statements.

The U.K. Accounting Standards Board has already issued standards calling for a revised income statement, a statement of recognized gains and losses, and a cash flow

statement. Those statements are much in accord with the recommendations of this report, apparently reflecting the significant impact of this among other U.K. reports on changes in financial reporting.

Overall, there are a number of parallels between this report and the Jenkins Report (AICPA, 1994). The two reports criticize the state of financial reporting in the U.K. and U.S. Both focus on user needs in financial statements. Therefore, the two reports are geared toward developing financial statements that are presumed relevant for decision making. Taking a forward look, both accentuate the uncertainties underlying accounting measurements and desirability of improved disclosure of such uncertainties. However, in contrast to *The Future Shape of Financial Reports,* the Jenkins Report recommends against current valuation as a comprehensive valuation basis and also against direct management forecasts in financial reports.

There is nothing earthshaking in either report: the ideas contained in each have appeared in authoritative and academic publications for many years. Given the significant impact of *The Future Shape of Financial Reports* in the U.K., perhaps it is time for similar recommendations to be adopted in the U.S.

REFERENCE

American Institute of Certified Public Accountants Special Committee on Financial Reporting. *Improving Business Reporting—A Customer Focus: Meeting the Information Needs of Investors and Creditors.* New York, 1994. (Jenkins Report)

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Setting the Standards for Financial Reporting: FASB and the Struggle for Control of a Critical Process, *by Robert Van Riper. Publisher, Westport, CT, 1994, 206 pp. $49.95.*

This chronicle of the Financial Accounting Standards Board (FASB) describes the political and socio-economic setting in which accounting regulations are developed in the U.S. The author, Robert Van Riper, describes the initiatives taken by the FASB to maintain control over the standard setting process. These struggles are presented comprehensively, realistically, interestingly and sometimes humorously, unlike most financial (principles, intermediate, and advanced) accounting texts. Using this book in an upper level financial accounting course should greatly enhance a student's understanding of the standard setting process in a nontraditional format. Kinney (1990) states that financial accounting course content is too technical and does not include the richness of the political and socio-economic environment of the standard setting process. This book addresses Kinney's concerns by presenting an insider's perspective of the standard setting process. This book is based on the experiences of the author, a senior staff member of the FASB from 1973-1991.

Chapter 1 describes the economic, social, political, and accounting standard setting environment that led to the development of the FASB. For example, he begins in 1917 when the Federal Reserve Board (FRB) published "Uniform Accounting." The FRB wanted uniformity in reporting from corporations that discounted commercial paper at the FRB's member banks. Riper explains that accountants were reluctant to acknowledge the need for generally accepted accounting principles because they believed they were not desirable or practical. However, the 1934 Securities Act gave the Securities and Exchange Commission (SEC) authority to promulgate the format and content of financial statements. Because the SEC lacked professional accounting expertise, they delegated their accounting responsibilities to accounting professionals: Committee on Accounting Procedure (CAP). After more history, Riper explains the significance of the Trueblood and Wheat Committees in development of accounting objectives and the seven-member FASB, respectively. This chapter provided a good backdrop for comprehension of the remainder of the book.

Chapter 2 documents the public's criticism of the FASB and the Board's realization of the need for a pressure on Capitol Hill if they wanted standard setting to remain in the hands of the private sector. Riper begins with a description of the organization structure and the significance of each unit (Financial Accounting Foundation [FAF], FASB, Financial Accounting Standards Advisory Council [FASAC]) of the self-regulated, privately-financed, private-sector, federal-law-backed FASB. I will use the Financial Accounting Foundation (FAF) as an example of Riper using the social and political setting to explain the significance of a unit. The FAF was the backbone of the FASB because they appointed the members to the Board and raised funds for its operations. The public demanded a Board with "expertise, public responsibility and independence from special interests" (p. 14). The Wheat Report required that the Board include four experienced CPAs in public practice and three from other relevant disciplines. As a result, the FAF selected the following original Board members: Marshall Armstrong (Chairman), managing partner of Geo. S. Olive and Co., the elected president of the American Institute of Certified Public Accountants (AICPA) and past member of the Accounting Principles Board (APB); John W. Queenan (Vice chairman), managing partner of Haskins & Sells, past CAP and APB member and former president of AICPA; Donald J. Kirk, partner with Price Waterhouse and former Navy jet pilot during the Korean war; Walter P. Schuetze, a former Air Force Russian-language specialist and employed by Peat, Marwick, Mitchell & Co.; Arthur L. Litke, former chief of Office of Accounting and Finance for the Federal Power Commission; Robert E. May, controller for Exxon Corp.; and Robert T. Sprouse, accounting professor at Stanford University and coauthor of *A Tentative Set of Broad Accounting Principles for Business Enterprises.*

In spite of the numerous criticisms that the Board received (e.g., lacked power to defend itself against corporate America and its members contributed little to learned journals), they worked diligently toward promulgating accounting principles. The Board initially selected seven of the 30 topics (issues) presented by the FASAC. Riper explains the Board's technical agenda and the public criticisms regarding each agenda item. (The controversy around Statements No. 8 and 52 are mentioned, but only briefly.) Finally, the Board in 1975 understood the need for a presence on Capitol Hill if they wanted to survive as the standard setting body. By 1978 the Board established a formal office on Capitol Hill.

Chapter 3 chronicles the criticisms from the banking industry and the SEC about the FASB. The banking industry challenged the Board's legitimacy when the board published the Discussion Memorandum "Accounting by Debtors and Creditors When Debt is Restructured." The Board advocated revaluing of debt at the time debt was restructured. However, the banking industry's interpretation of the Discussion Memorandum was revaluing of assets and liabilities at each balance sheet date.

The SEC marginally (3-2 vote) agreed to rely on the FASB to develop accounting principles. Because the FASB was slow to respond to its constituents concerning inflation, the SEC issued Accounting Series Release (ASR) 190. However, the SEC privately assured the FASB, and did honor its commitment, that ASR 190 would be phased out when the FASB issued Statement No. 33. In September 1979, Statement No. 33 was issued.

Chapter 4 posits that the SEC loses confidence in the FASB relative to Oil & Gas Accounting. When the FASB issued Statement No. 19, "Financial Accounting and Reporting by Oil and Gas Producing Companies," the SEC refused to support the regulation. Riper explains the controversy among the FASB's constituencies and the FASB's fear of losing their standard setting authority to the SEC. However, this is the only time, through 1993, that the SEC did not support the FASB.

Chapter 5 describes the debate surrounding the development of the Conceptual Framework. The Conceptual Framework represented an agent for change when there were potent forces favoring the status quo. Riper presents the issues discussed by the FASB when deliberating about Statement of Financial Accounting Concepts (SFAC) Nos. 1-6. The Board received criticisms from these concepts and found the "struggle both draining and discouraging." This chapter highlights the interplay between personalities of the Board members and their critics in the development of the Conceptual Framework.

Chapter 6 explains the many changes taking place in the private standard setting group. The three new personalities on the Board are described. The most significant change was the opening of FASB meetings to the public as a result of the Sunshine in Government Act of 1977. Riper further describes the change in "due process," the limitations on annual contributions to the FAF from a single firm, the organizing of the Government Accounting Standards Board (GASB), and the proliferation of accounting principles. The FASB also began to seriously listen to concerns of the small businessman.

In Chapter 7, the decade of the 1980s, the Board was criticized about everything including its organization structure and standards promulgated. The standards were criticized as too theoretical and technical and negligent in defining effective dates and transition periods for new standards. Others claimed that the Board was working on the wrong projects. The staff was booed as being a bunch of academics with little practical experience. The organization structure resulted in a slow standard setting process. The most frequently voiced complaint was the Board's disregard to cost-benefit considerations and economic and social consequences of standards. In response to these complaints, the FASB developed an Emerging Issues Task Force (EITF) to identify implementation problems and emerging issues that should be brought to the Board's attention. While the EITF proved to be effective in freeing up the Board from looking at every issue, and from producing a proliferation of new standards, Riper describes that the Board continued to be criticized, but on other issues.

In Chapter 8 Riper explains that although an opinion survey and the "white paper" showed strong support for the FASB and its staff, complaints and criticisms continued to flourish. The Conceptual Framework was said to be a smokescreen for the board's agenda to impose current value accounting. Others criticized the Board's accounting for pension costs. Riper details these criticisms with the logic used by these critics. An explanation of the Board's position and its personalities is also presented.

Chapter 9 begins with the changing of the guard of the FASB. Denny Beresford, a powerful accountant, became the chairman. Beresford's agenda included international harmonization. Reed, chairman of the Roundtable Task Force, presented a long list of written complaints to the FASB in October 1987. Riper presents the debate between the FASB and SEC in addressing these complaints. The most debated issue was accounting for executive compensation. Riper concludes that by 1993, the Board proposed a standardized rule stating that stock options should be measured at fair value on the grant date and recorded during the vesting period.

Chapter 10 juxtaposes GASB to FASB and portrays the Foundation trustees as referees. The trustees in the fall of 1984 had agreed to the formation of GASB. However, by 1987 FASB was reluctant to comply with its 1984 agreement. For example, FASB did not want to share funds with GASB. Further, there was internal fighting within FASB on whether to increase the voting requirement for passage of a statement from a simple majority to a super majority. During this time of internal turmoil, the SEC continued to support FASB as the authoritative standard setting body.

Chapter 11 echoes the concerns regarding the lack of an objective approach to standard setting. Riper explains that some feared that "Corporate America" was influencing the FASB to act in Corporate America's and the Savings and Loans' best interests rather than in the best interest of the public.

Chapter 12 concludes by describing the widespread influence of corporate financial reporting. For example, corporations' accountability extends to owners, debt holders, classes of organizations that have a financial interest and to the general public. Riper concludes that the FASB will probably continue to receive criticisms from these constituencies. Riper encourages the Board and its trustees to continue to fight to keep the standard-setting authority in the private sector.

Riper has done an excellent job of demonstrating how the FASB has struggled to maintain standard setting in the private sector. He details the personalities, criticisms, political environment, and its interplay with the standard setting process. The book is fun to read because it is an insider's perspective of how accounting regulation is formulated. I recommend this book as supplemental reading for upper level accounting classes so that students understand the standard setting process and its socio-economic and political environment.

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BOOK REVIEWS

The International Journal of Accounting

A Comparison of U.S. and Japanese Analysts' Forecasts of Earnings and Sales

Vivek Mande
University of Nebraska

Key Words: Analysts' forecasts, harmonization

Abstract: *This study finds that Japanese analysts provide superior forecasts of sales when compared to their U.S. counterparts. Their relative superiority could not be attributed to any timing advantage with regard to forecasting. Instead, the results suggest that Japanese analysts have an informational advantage over their U.S. counterparts. Selected proxies for the information environment were used to explain the Japanese analyst's forecast superiority over his/her U.S. counterpart. Results showed support for the hypotheses. Specifically, they showed that as the number of lines of business and domestic affiliates (firm size) increased, the relative sales forecast accuracy of the Japanese analyst also increased (decreased). Interestingly, no differences were observed between the two analyst groups in forecasting earnings. These results have important implications for policy on harmonization of accounting standards.*

Several papers in accounting and finance have examined whether superior financial analysts exist. Using data on U.S. analysts' forecasts, O'Brien (1990) finds that, on average, there are no differences in the forecasting abilities of individual analysts. However, Sinha, Brown and Das (1994), using a more powerful methodology that controls for forecast recency, find that superior U.S. analysts do exist.[1] The existence of a superior analyst is also shown in Stickel (1992) who finds that analysts on the All-American Research Team of the Institutional Investor outperform other U.S. analysts on the Zacks Investment Research data base. Related research by Brown, Hagerman, Griffin and Zmijewski (1987a) suggests that superior forecasts result from a timing advantage (i.e., analysts with recent forecasts are likely to forecast more accurately) and an informational advantage (i.e., analysts with access to superior information sets are likely to forecast more accurately) with regard to forecasting.

The current study builds on the above research by comparing quarterly forecasts of earnings and sales of Japanese firms made by security analysts of a Japanese brokerage house with quarterly earnings and sales forecasts of U.S. analysts for the same Japanese firms. We

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test two sets of hypotheses. The first set of hypotheses examines whether there are significant differences in the forecast accuracies of U.S. and Japanese analysts. There are several reasons for expecting superior forecasts from Japanese analysts. First, these analysts are located closer to the sources of information which might provide them with a more timely access to that information.[2] Second, these analysts are likely to have a greater knowledge of local customs and norms which might give them an edge with regard to the access and use of information. Choi and Levich (1991), for example, interview market traders on international exchanges and find that those who familiarize themselves with local "environmental norms" fare better than those who do not.[3] Consistent with the hypothesis, our results show that Japanese analysts provide superior forecasts of sales in each of the four quarters of the fiscal year. However, in all the quarters studied no differences in earnings forecast accuracy were found.

Our second set of tests attempts to explain the source of Japanese analysts' forecast superiority in sales. Test results show that their superiority could not be attributed to any timing advantage with regard to forecasting. Instead, the results appear to suggest that these analysts have an informational advantage over their U.S. counterparts; we find that their relative forecast accuracy increases with the number of lines of business and number of domestic affiliates of the firm (that is used to proxy for quantity of publicly available information) and decreases with foreign ownership and firm size (that are used to proxy for intensity of outside scrutiny). Test results for the two sets of hypotheses, however, are based on a small sample of 212 forecasts made for 12 Japanese firms by forecasters of Value-Line and Toyo Kezai during the period 1987-1992. Generalization of these results should, therefore, be made with caution.

The findings of this study are important for several reasons. First, a comparison of Japanese and U.S. analysts' forecasts is important for increasing our understanding of factors that cause cross-national differences in forecast accuracy. Second, it is important for investors who use these forecasts for investing in Japanese stocks.[4] Third, prior research in accounting has largely focused only on analysts' earnings forecasts. This study finds that there are additional insights to be obtained by examining their forecasts of other financial statement items. Last, the results here have implications for policy on the harmonization of accounting practices. Proponents of harmonization have argued that accounting diversity gives investors of the local country an informational advantage over foreign investors.[5] Opponents of the policy, however, argue that harmonization will only distort financial statements of the firm in the local country (see, for example, Lowe, 1990). In addition, Choi and Levich (1991) suggest that a restatement of financial statements under a harmonized GAAP will not be sufficient to remove the problem of accounting diversity. They argue that "even if accounting standards are required to be identical in all countries, an understanding of local norms and customs" will continue to be critical for the correct interpretation of financial statements. The findings of the current study are supportive of the conjecture in Choi and Levich—our results suggest that knowledge of local norms and customs is important for interpretation of financial statements. We find that U.S. analysts are informationally disadvantaged when a sample consists of mostly Japanese firms whose financial statements have been harmonized to U.S. GAAP (see Table 1).

The paper is organized as follows. First, data sources and data collection procedures are described, next the question of whether Japanese analysts provide superior forecasts is examined. The paper then tests whether the source of their superiority is related to variables that proxy for informational asymmetry, and provides concluding remarks.

Table 1. Firms in Sample

Firm Name	*Exchange Listing*	*GAAP Used*
Canon Inc.	NASDAQ	U.S. GAAP
Fuji Photo Film Co., Ltd.	NASDAQ	U.S. GAAP
Hitachi, Ltd.	NYSE	U.S. GAAP
Honda Motor Co., Ltd.	NYSE	U.S. GAAP
Kyocera Corp.	NYSE	U.S. GAAP
Matsushita Electric Industrial Co., Ltd.	NYSE	U.S. GAAP
NEC Corp.	OTC	U.S. GAAP
Nissan Motor Co., Ltd.	OTC	JAPAN GAAP
Pioneer Electronic Corp.	NYSE	U.S. GAAP
Sony Corp.	NYSE	U.S. GAAP
TDK Corp.	NYSE	U.S. GAAP
Toyota Motor Corp.	NASDAQ	JAPAN GAAP

DATA

For the firms in the sample, data were collected on consolidated annual earnings and sales of Japanese firms for the fiscal years 1987-1992 (six years). Analysts' forecasts of these variables were obtained from two sources: the *Value-Line Investment Surveys* (*VL*), which provided quarterly forecasts made by U.S. analysts, and the *Japan Company Handbook* (*JCH*), which provided quarterly forecasts made by Japanese analysts.[6] To be included in the database, the forecasts had to be made after January 1, 1987,[7] but prior to December 31, 1992.

The *JCH* provides four forecasts of annual earnings and sales each year. These forecasts are made by Japanese analysts of Toyo Keizai, a Japanese brokerage firm, and are reported in the Spring, Summer, Autumn and Winter issues of the *JCH*. *VL* Investment Surveys are published weekly. A different set of 130 companies is covered each week for about 13 weeks before coverage returns to the same companies. In each year there are, therefore, usually four (sometimes five) *VL* forecasts of annual earnings and sales. Forecasters of *VL* and *JCH* enjoy the high trust of their respective subscribers.[8] With the exception of two stocks (Toyota and Nissan), *VL*'s forecasts were available for the entire sample period. Toyota and Nissan were added to *VL*'s extensive coverage of about 1300 stocks in 1989.[9]

There were 12 Japanese firms for which forecasts were available on both the *VL* and *JCH* (Table 1). Three of these belong to the automotive industry. Of the remainder, several manufacture electronic products. To facilitate comparison of forecasts made by the two analyst groups, each Japanese analyst's forecast was matched with a forecast made by his/her U.S. counterpart. Forecasts were matched by the fiscal quarter in which they were made (i.e., the U.S. analyst's forecast made in the first fiscal quarter was matched to his/her Japanese counterpart's forecast made in the first fiscal quarter, and so on).[10]

The *JCH*'s Spring, Summer, Autumn, and Winter issues are usually published in the first week of February, May, August, and November respectively.[11] *VL* publishes its forecasts for firms in the automotive industry in a different edition from the rest of the firms. For firms

in the automotive industry, forecasts on the *VL* are published on average 43 days *before* the publication of the *JCH*. By contrast, *VL*'s forecasts for the other firms are typically published on average approximately 10 days *after* the publication of the *JCH*. Because we match by fiscal quarter, each Japanese analyst's forecast published in a given month for firms in the automotive industry (non-automotive industry) is compared to a U.S. forecast published in *VL* in the preceding two months (same month). The unmatched forecasts were discarded.[12]

O'Brien (1988) shows that analysts' forecast accuracy increases as the earnings announcement approaches. Therefore, for the firms in the automotive industry (other firms), the results in this paper would be biased in favor of (against) finding superior forecast accuracy for Japanese analysts. Note that only the publication dates (and not forecast dates) of the *JCH* and *VL* are available. The statement above, therefore, assumes that the lag between the forecast and its publication is the same for both the *VL* and the *JCH*. The effect of this assumption and its implication for the bias is examined later.

Effort was made to ensure that the earnings, sales, and forecast data were comparable across the two publications. First, we verified that the earnings, sales and forecast data were adjusted for stock splits in the two publications in the same way. A stock split was identified by examining the changes in the ADR[13] to Share Ratio in *VL* and the footnotes in *VL*. An inspection of the forecast data showed that, for some of these splits, *VL* had forecasted the pre-split amount, while the actual earnings and sales subsequently reported in *VL* were split adjusted. In these cases, the *VL* forecast was adjusted by the amount of the split. Second, three firms in the sample changed their fiscal years during this period. In the year of the change, the *JCH* consistently reported forecasts and earnings for the new (short) fiscal period. *VL*, however, continued to make forecasts for the original and longer fiscal period in some of the quarters in the year of the change. Because it was often not clear which fiscal period was being forecast, all forecast data in the year of the change was deleted from the sample. Third, we deleted "outliers" by discarding forecast errors (actual earnings (sales) minus forecasted earnings (sales)) larger than 100 percent in absolute value. Results in the paper were robust to the deletion of forecast errors that were larger than 200 percent in absolute value. Finally, we verified that the earnings and sales data in *VL* and *JCH* were consistent with that in *Moody's International Manual*, Vol. 2, which reported both these figures and that both analysts were forecasting consistently on the same GAAP.[14] Proxy variables representing informational asymmetry were obtained from *JCH* and Moody's. Specifically, data were collected from the *JCH* on total assets (*TOTASS*), number of lines of business (*LOB*) and percentage of capital owned by foreigners (*FCAP*), while Moody's provided the number of domestic affiliates of each firm (*AFFIL*). The final data set has twelve firms, for which there are 212 observations for each analyst group.

DO JAPANESE ANALYSTS PROVIDE SUPERIOR FORECASTS?

Hypotheses

Closer geographical proximity and greater knowledge of local customs and norms should result in superior Japanese forecasts (higher forecast accuracy). The hypotheses tested, therefore, are:

H1: *Japanese analysts forecast annual earnings more accurately than U.S. analysts.*

H2: *Japanese analysts forecast annual sales more accurately than U.S. analysts.*

Forecast Accuracy

Forecast accuracy is defined as the percentage earnings or sales forecast error:

$$\text{Percentage Forecast Error}_{ikq} = (A_i - F_{ikq}) / |F_{ikq}| \quad (1)$$

where:

A_i = actual earnings or actual sales of firm i
F_{ikq} = earnings or sales forecast made by analyst k in quarter q for firm i.

For the Japanese analysts, percentage forecast error was computed by subtracting the earnings or sales forecast (on a per share basis) from the actual earnings or sales per share obtained from the *JCH*, which was then divided by the absolute forecasted amount. The U.S. analysts provided sales and earnings forecasts on a per ADR basis. These forecasts were subtracted from the actual sales or earnings per ADR reported in *VL* and divided by the absolute forecasted amounts to obtain the percentage forecast error for U.S. analysts.[15] Because forecast and earnings data were obtained from different publications, the use of the percentage forecast error (rather than forecast error divided by a deflator such as stock price) facilitated comparison across the two analyst groups.

Based on Equation 1 above, four measures of the forecast error were obtained for each firm in each quarter. These are:

- *FEJ(qy)* = *Percentage earnings forecast error* of the *Japanese* analyst for quarter q and fiscal year y.
- *FEU(qy)* = *Percentage earnings forecast error* of the *U.S.* analyst for quarter q and fiscal year y.
- *FSJ(qy)* = *Percentage sales forecast error* of the *Japanese* analyst for quarter q and fiscal year y.
- *FSU(qy)* = *Percentage sales forecast error* of the *U.S.* analyst for quarter q, and fiscal year y.

Table 2 presents the distribution summary of these forecast errors, by quarter. The mean and median earnings forecast errors of both U.S. and Japanese analysts are almost always negative in each of the four quarters, reflecting a consistent optimistic bias. It supports the findings of Francis and Philbrick (1993), that analysts add a measure of optimism to their earnings forecasts to remain in favor with corporate management.[16] There has been little research, however, on whether such optimism is also built into their sales forecasts. Table 2 shows that for the two groups, the mean and median sales forecast error is not consistently optimistic in all quarters, indicating that there is less incentive for the analyst to bias his/her sales forecast upwardly.[17] The following section tests the question of forecast superiority

Table 2. Distribution Summary of Earnings and Sales Forecast Errors For U.S. and Japanese Analysts

	Quantiles						
Variable	*10th*	*25th*	*50th*	*75th*	*90th*	*Mean*	*Std. dev.*
FEJ (1)	−0.491	−0.246	−0.096	0.032	0.237	−0.110	0.308
FEJ (2)	−0.435	−0.245	−0.083	0.006	0.144	−0.096	0.317
FEJ (3)	−0.305	−0.133	−0.049	0.060	0.142	−0.057	0.241
FEJ (4)	−0.129	−0.074	−0.004	0.054	0.151	0.024	0.253
ALL QTRS	−0.366	−0.187	−0.048	0.052	0.324	−0.060	0.283
FEU (1)	−0.460	−0.251	−0.091	0.085	0.250	−0.076	0.310
FEU (2)	−0.474	−0.243	−0.102	0.006	0.138	−0.128	0.234
FEU (3)	−0.396	−0.162	−0.059	0.017	0.125	−0.098	0.208
FEU (4)	−0.275	−0.1	−0.009	0.052	0.119	−0.033	0.215
ALL QTRS	−0.431	−0.202	−0.065	0.045	0.164	−0.084	0.245
FSJ (1)	−0.090	−0.042	−0.000	0.053	0.106	0.009	0.080
FSJ (2)	−0.055	−0.032	0.009	0.049	0.107	0.019	0.071
FSJ (3)	−0.030	−0.012	0.011	0.028	0.075	0.005	0.104
FSJ (4)	−0.015	−0.002	0.011	0.027	0.048	0.014	0.024
ALL QTRS	−0.045	−0.015	0.009	0.039	0.080	0.011	0.076
FSU (1)	−0.088	−0.013	0.029	0.090	0.233	0.047	0.108
FSU (2)	−0.107	−0.073	−0.027	0.045	0.128	−0.006	0.102
FSU (3)	−0.107	−0.080	−0.037	0.027	0.071	−0.042	0.135
FSU (4)	−0.038	−0.020	−0.001	0.015	0.032	−0.002	0.054
All QTRS	−0.100	−0.058	−0.003	0.038	0.106	−0.001	0.109

Notes: *FEJ*(i) is the Japanese analyst earnings forecast error for quarter *i*.
FEU(*i*) is the U.S. analyst earnings forecast error for quarter *i*.
FSJ(*i*) is the Japanese analyst sales forecast error for quarter *i*.
FSU(*i*) is the U.S. analyst sales forecast error for quarter *i*.

by defining a measure of relative forecast accuracy using the *absolute* difference of *matched* forecast errors.

Relative Forecast Accuracy

Relative forecast accuracy is computed as the difference in the absolute value of *matched*[18] earnings and sales forecast errors:

$$DIFFEPS_{iq} = |FEJ_{iq}| - |FEU_{iq}| \tag{2}$$

$$DIFFSALES_{iq} = |FSJ_{iq}| - |FSU_{iq}| \tag{3}$$

where, *DIFFEPS* (*DIFFSALES*) is the difference in the absolute value of percentage earnings (sales) forecast errors of Japanese and U.S. analysts for quarter *q*, for firm *i*.

The test procedure used tests for significance in the pairwise differences in forecast errors of the two analyst groups. The use of pairwise differences in forecast errors miti-

gates the problem of cross-sectional dependence in forecast errors, that is, while forecast errors should be expected to be cross-sectionally correlated because of macro-economic factors affecting earnings of all firms, *differences* in forecast errors should not be related across firms (see Stickel, 1992).

O'Brien (1988) finds that analysts' forecast accuracy increases as the earnings announcement approaches. It is possible, therefore, that pairwise differences in forecast errors will not likely be identically distributed across each quarter, *q*. To mitigate the above problem, Stickel (1992) proposes using the *mean* of the *difference* in forecast errors for each quarter in a given year for the 12 sampled firms:

$$\overline{DIFFEPS}_{qy} = \sum_{1}^{12}(|FEJ_{iqy}| - |FEU_{iqy}|)/12 \tag{4}$$

$$\overline{DIFFSALES}_{qy} = \sum_{1}^{12}(|FSJ_{iqy}| - |F\ \ U_{iqy}|)/12 \tag{5}$$

where *y* denotes year, *q* the quarter and *i* the firm. All other symbols are as previously defined.

The overall mean is then calculated as the average of the 24 quarterly means obtained using Equations 4 and 5 above:[19]

$$\overline{DIFFEPS} = \sum_{1}^{24}(\overline{DIFFSALES}_{qy})/24 \tag{6}$$

$$\overline{DIFFSALES} = \sum_{1}^{24}(\overline{DIFFSALES}_{qy})/24 \tag{7}$$

The significance of this overall mean is tested with the following *t*-statistic, where σ is the standard deviation of quarterly means.[20]

$$t = (\overline{DIFFEPS}\ or\ \overline{DIFFSALES})(\sigma/\sqrt{24}) \tag{8}$$

If the monthly means are independent and identically distributed normal variables, then the overall means ($\overline{DIFFEPS}$ and $\overline{DIFFSALES}$) will also be normally distributed. The use of the test statistic in Equation 8 would be appropriate in this situation (DeGroot, 1986). The use of this statistic would also be appropriate for large samples even if the distribution of each monthly mean was unknown. This is because by the Central Limit Theorem, the distribution of the overall mean would tend to a standard normal for large samples (DeGroot, 1986). To the extent that our monthly means are not normal random variables, the test results in Table 3 would have to be interpreted with caution because the number of observations used is small,[21] consisting of 24 observations.[22]

Table 3 shows the distribution summary of the 24 quarterly means of differences in matched earnings and sales forecast errors. The mean value (median value) of $\overline{DIFFEPS}$ is -.005 (-0.014) indicating that on average the Japanese analyst outperforms his/her U.S. counterpart by 0.5 percent (1.4 percent) in forecasting earnings. The test that

Table 3. Distribution Summary of the Quarterly Mean Differences in Matched Forecast Errors

	Quantiles						
Variable	10th	25th	50th	75th	90th	Mean	*t*-value
$\overline{DIFFEPS}$	–0.072	–0.041	–0.014	0.026	0.063	–0.005	–0.488
$\overline{DIFFSALES}$	–0.091	–0.044	–0.020	0.000	0.018	–0.029	–2.845

Notes: $\overline{DIFFEPS}$ is the quarterly mean difference in matched earnings forecast error
$\overline{DIFFSALES}$ is the quarterly mean difference in matched sales forecast error

Table 4.

A. Distribution Summary of Pairwise Differences in Forecast Errors of Earnings and Sales

	Quantiles						
Variable	*10th*	*25th*	*50th*	*75th*	*90th*	*Mean*	*t-value*
DIFFEPS (1)	–0.122	–0.085	–0.002	0.047	0.160	–0.001	–0.060
DIFFEPS (2)	–0.194	–0.073	–0.002	0.080	0.167	0.024	0.711
DIFFEPS (3)	–0.109	–0.052	–0.006	0.061	0.145	0.006	0.312
DIFFEPS (4)	–0.192	–0.058	–0.019	0.043	0.098	–0.015	–0.752
ALLQTRS	–0.134	–0.059	–.006	0.055	0.141	0.004	0.313
DIFFSALES (1)	–0.139	–0.067	–0.012	0.023	0.067	–0.023	–2.001
DIFFSALES (2)	–0.100	–0.068	–0.014	0.006	0.066	–0.026	–2.248
DIFFSALES (3)	–0.107	–0.063	–0.034	0.007	0.034	–0.037	–2.762
DIFFSALES (4)	–0.044	–0.021	–0.008	0.013	0.026	–0.011	–1.703
ALLQTRS	–0.107	–0.054	–0.019	0.011	0.050	–0.024	–4.198

B: Number of Superior U.S. Forecasts in Total Sample

	# of Superior U.S. Forecasts	Total Number of Forecasts	% of Superior U.S. Forecasts
NEPS (1)	28	56	50%
NEPS(2)	27	53	51%
NEPS (3)	28	60	46%
NEPS (4)	21	53	40%
ALL QTRS	104	212	47%
NSALES (1)	21	56	38%
NSALES (2)	17	53	32%
NSALES (3)	19	60	31%
NSALES (4)	24	53	40%
ALL QTRS	81	212	37%

Notes: *DIFFEPS* (*i*) is the difference in matched earnings forecast error for quarter *i*.
DIFFSALES (*i*) is the difference in matched sales forecast error for quarter *i*.
NEPS(*i*) (*NSALES*(*i*)) is the # of times the U.S. analyst earnings (sales) forecast error is superior to the Japanese analyst earnings (sales) forecast error.

the mean difference in their forecast errors is different from zero, however, is not rejected. By contrast, the test that the mean difference in sales forecast errors is equal to zero is rejected strongly (*t*-value = -2.845). The mean value (median value) of $\overline{DIFFSALES}$ is -.029 (-0.020), indicating that on average the Japanese analyst outperforms his/her U.S. counterpart by 2.9 percent (2 percent) in forecasting sales.

Table 4 (Panel A) reports the results of an alternative test. It presents the distribution of *DIFFEPS* and *DIFFSALES* by quarter. The mean of *DIFFEPS* is not statistically different from zero in all four quarters of the year. By contrast, results supporting Japanese analysts' superiority for forecasting sales is strong. In each of the four quarters, the *DIFFSALES* is negative and statistically different from zero, supporting the hypothesis that Japanese analysts produce superior sales forecasts. On average, the Japanese analyst outperformed his/her U.S. counterpart between 1.1 percent (quarter 4) and 3.7 percent (quarter 3). For quarter 4, the mean of *DIFFSALES* was significantly different from zero at the 5 percent level of testing.

Table 4 (Panel B) reports the number of times a U.S. analyst outperformed his/her Japanese counterpart each quarter. For all quarters combined, the U.S. analyst was outperformed by the Japanese analyst 53 percent of the time in forecasting earnings. In forecasting sales, however, the U.S. analyst was outperformed 63 percent of the time for all quarters combined.[23] The results are therefore stronger in supporting Japanese analysts' superiority for sales. These results are consistent with those in Panel A.

DO JAPANESE ANALYSTS HAVE A TIMING ADVANTAGE IN FORECASTING?

Our study found that, on average, for firms in the automotive industry (other firms) *VL*'s publication date preceded (followed) *JCH*'s publication date by 43 days (10 days). *VL* and Toyo Keizai were contacted to find out how many days prior to the publication their analysts made their forecast. We were told that *VL*'s forecasts were made about seven days prior to the publication date, while for *JCH* the lag was longer; Toyo Keizai forecasts were made about a month and two weeks prior to their publication.[24] This suggests that for firms in the automotive industry (other firms), both *VL* and *JCH* analysts' forecasts are made about the same time (a month later). This should bias results against the hypothesis that Japanese analysts produce superior forecasts. However, to increase our confidence in the tests we conducted analyses separately for each group of firms (automotive and non-automotive).

Table 5 reports summary results on forecasts by industry.[25] For both the automotive and non-automotive firms, the average of the 24 quarterly means, $\overline{DIFFEPS}$ (defined in Table 3) and the mean of *DIFFEPS*, pooled across all quarters (defined in Table 4) are not significantly different from zero. The corresponding metrics for sales, $\overline{DIFFSALES}$ and mean of *DIFFSALES* are, however, negative and statistically different from zero for the non-automotive firms, supporting the conclusion that the results above are not driven by a possible timing bias that Japanese analysts might have with regard to the automotive firms.[26] In fact, for the automotive firms, both $\overline{DIFFSALES}$ and mean of *DIFFSALES* are not different from zero. The last two columns in the table show the number of times the U.S. analyst outperformed his/her Japanese counterpart. In support of the findings above, we find that the U.S. analyst is convincingly outperformed in forecasting sales (65 percent of the time) only for the non-automotive firms.

To summarize, the results in Tables 2-5 show that Japanese analysts are superior to their U.S. counterparts in forecasting sales. Further, this superiority cannot be attributed to any timing advantage with regard to forecasting. It is interesting, however, that no such differences were found in earnings forecast accuracy. One explanation consistent with the latter

Table 5. Summary Statistics on Forecast Data by Industry (*t*-values in parentheses)

INDUSTRY	*N*	$\overline{DIFFEPS}$	$\overline{DIFFSALES}$	*MEAN DIFFEPS*	*MEAN DIFFSALES*	*% NEPS*	*% NSALES*
Automobile	3	0.0139	–0.02573	0.025	–0.006	48 %	44 %
		(0.415)	(–1.369)	(0.679)	(–0.810)		
Non-Automotive	9	–0.0029	–0.026	–0.010	–0.024	46 %	35 %
		(–0.251)	(–2.575)	(–1.075)	(–3.231)		

Notes: $\overline{DIFFEPS}$ is the quarterly mean difference in matched earnings forecast error
$\overline{DIFFSALES}$ is the quarterly mean difference in matched sales forecast error
Mean *DIFFEPS* is the mean of the matched difference in earnings forecast error (pooled across all quarters)
Mean *DIFFSALES* is the mean of the matched difference in sales forecast error (pooled across all quarters)
% NEPS is the percentage of the total *number* of forecasts for which U.S. analysts' earnings forecast error was superior to the Japanese analysts' earnings forecast error. item
% NSALES is the percentage of the total *number* of forecasts for which the U.S. analysts' sales forecast error is superior to the Japanese analysts' sales forecast error.

result is provided below. Sakakibari, Yamaji, Sakurai and Fukuda (1988) state that Japanese financial statements were traditionally intended for the firm's creditors (as opposed to its stockholders). Because creditors of the firm are more likely to be impressed by stable earnings than any other group, Japanese firms have greater incentives to smooth earnings. Smoothed earnings have lower variance and should therefore be easier to predict for both U.S. and Japanese analysts. The informational advantage of a Japanese analyst, thus, is less likely to be reflected in his/her forecast of earnings than that of sales—which are more difficult for the firm to manage.[27]

DO JAPANESE ANALYSTS HAVE AN INFORMATIONAL ADVANTAGE?

Test results in the last section are consistent with the hypothesis that Japanese analysts have an informational advantage over their U.S. counterparts. As noted earlier, forecast superiority could be attributed to closer geographical proximity to the source of information and greater knowledge of local norms and customs which potentially makes it easier for the Japanese analyst to tap into the corporate informational network. This section provides evidence on this issue by examining directly the source of Japanese analysts' forecast superiority. It tests for the relation between relative forecast accuracy of Japanese analysts and variables that proxy for the informational environment.

Alternative Definition of Relative Forecast Accuracy

Relative forecast accuracy was defined earlier as the difference in percentage forecast errors. Following Brown, Richardson and Schwager (1987b), relative forecast accuracy is also defined as the ratio of the variance of Japanese analysts' forecast errors to the variance of U.S. analysts' forecast errors for each matched pair of forecast errors:

$$RATIOE = \sigma^2_{FEJ} / \sigma^2_{FEU} = FEJ^2 / FEU^2 \qquad (9)$$

$$RATIOS = \sigma^2_{FSJ} / \sigma^2_{FSU} = FSJ^2 / FSU^2 \qquad (10)$$

where *RATIOE* and *RATIOS* denote the ratio of the variances of the earnings and sales forecast errors, respectively. A ratio of less (greater) than one, would indicate that Japanese analysts' forecast accuracy is higher (lower) than their U.S. counterparts.

Variables used to Proxy for Informational Asymmetry

The first variable used to explain Japanese analysts' forecast superiority is the number of domestic affiliates (*AFFIL*) of a firm. Affiliate firms of each corporate group are interlocked via complex mechanisms, such as transfers of personnel, cross-ownership of stock, and cross-representation on the board of directors. Nine of the twelve Japanese firms examined in the study are identified by Lowe (1990) as a separate corporate group.[28] Imhoff (1990), and Jacobson and Aacker (1993) report that there are significant informational flows between managers of interlocking groups. Because of locational advantages and familiarity with local norms, Japanese analysts are likely to be more efficient in tapping into these information flows when compared to their U.S. counterparts.[29] We therefore predict that as the number of affiliates increases, the Japanese analyst's ability to exploit his/her informational advantage (and his/her forecast superiority) will increase.

The second variable used is the number of lines of business (*LOB*) of each firm. Brown et al. (1987b) argue that analysts will receive *more* diverse types of information when there are many lines of business. We therefore predict that for firms with greater lines of business there will be greater opportunities for the Japanese analyst to exploit his/her informational advantage. The hypothesis tested is that as *LOB* increases the Japanese analyst's informational advantage will also increase.[30]

The third variable used is the percentage of the firm owned by foreigners or non-Japanese investors (*FCAP*). The fraction of outside ownership (foreign ownership) in a firm has been used to proxy for the degree of scrutiny exercised by outsiders;[31] as the outsider's ownership fraction increases, his/her scrutiny of the firm's operations is expected to increase. Further, firms that have been more successful in raising capital in foreign markets in the past are likely to be those where informational asymmetry is less of a problem. For both these reasons, it is expected that the relative informational advantage of the Japanese analyst will decrease with the fraction of foreign ownership.

Brown et al. (1987b) show that differences in forecast accuracy are related to firm size (*SIZE*). They argue that the quantity of information available about future earnings is positively related to this variable. For large firms this could mean that there are greater opportunities for the Japanese analyst to exploit his/her informational advantage. On the other hand, large firms are likely to be closely followed by analysts. Bhushan (1989) suggests, for example, that analysts focus on large firms because they earn larger returns for these firms. Japanese analysts' superiority could, therefore, decrease with this variable. We let the data discriminate between these opposing predictions.

Finally, we control for the potential timing advantage that the Japanese (U.S.) analyst has over his/her counterpart in forecasting for firms in the automotive industry (non-automotive firms). The variable *TIME* is defined as the number of days between the publication of the *JCH* and *VL*.[32] *TIME* is positive (negative) for firms in the automo-

Table 6. Summary Statistics on Variables Used in Cross Sectional Regression

	Quantiles						
Variable	*10th*	*25th*	*50th*	*75th*	*90th*	*Mean*	*Std. dev.*
FCAP	6.3	8.3	11	15.8	21	11.973	5.335
AFFIL	6	19	37	44.5	53	33.872	19.719
LOB	3	4	4	5	6	4.235	0.983
TOTASS	612475	1299843	2953328	6401888	8631110	3694585	2876941
TIME: AUTO	34	44	45	46	47	43.483	4.763
TIME: OTHER	−30	−20	−18	−16	−14	−17.234	13.614
LRATIOE (1)	−0.856	−0.425	0.025	0.339	0.809	−0.025	1.719
LRATIOE (2)	−0.942	−0.505	0.062	0.749	1.479	0.158	1.058
LRATIOE (3)	−1.780	−0.537	−0.046	0.514	1.099	−0.157	1.163
LRATIOE (4)	−1.793	−0.731	−0.208	0.481	1.478	−0.298	1.586
LRATIOE(ALL QTRS)	−1.328	−0.575	−0.020	0.513	1.205	−0.080	1.404
LRATIOS (1)	−1.521	−0.883	−0.110	1.267	2.271	−0.001	1.872
LRATIOS (2)	−1.780	−1.134	−0.289	0.469	1.083	−0.268	1.378
LRATIOS (3)	−2.393	−1.594	−0.824	0.072	1.246	−0.734	1.515
LRATIOS (4)	−1.733	−0.767	−0.134	0.783	1.722	−0.100	1.544
LRATIOS (ALLQTRS)	−1.939	−1.152	−0.299	0.611	1.756	−0.240	1.612

Notes: *FCAP* is the percentage of foreign ownership
AFFIL is the number of domestic affiliates
LOB is the number of lines of business
TOTASS is the amount of total assets (in yen)
TIME: AUTO is the lag between publication dates for the automobile industry in number of days
TIME: OTHER is the lag between publication dates for the rest of the sample companies in number of days
LRATIOE is the log of the ratio of the squared earnings forecast errors of Japanese analysts divided by the squared earnings forecast errors of U.S. analysts
LRATIOS is the log of the ratio of the squared sales forecast errors of Japanese analysts divided by the squared sales forecast errors of U.S. analysts

tive industry (non-automotive firms), indicating that the Japanese analyst made his/her forecast after (before) the U.S. analysts' forecast. As the timing variable increases, it is expected that the Japanese analyst's relative forecast accuracy will increase (O'Brien, 1988).

Four models are estimated using the variables discussed above to explain Japanese analysts' superiority.[33]

$$DIFFEPS_i \text{ or } DIFFSALES_i = \alpha_0 + \alpha_1 AFFIL_i + \alpha_2 FCAP_i + \alpha_3 SIZE_i + \alpha_4 LOB_i + \alpha_5 TIME_i + \varepsilon_i \qquad (11)$$

$$RATIOE_i \text{ or } RATIOS_i = \alpha_0 + \alpha_1 AFFIL_i + \alpha_2 FCAP_i + \alpha_3 SIZE_i + \alpha_4 LOB_i + \alpha_5 TIME_i + \varepsilon_i \qquad (12)$$

Consistent with Brown et al. (1987b), we found that the dependent variables *RATIOE* and *RATIOS* were skewed in the raw form but were not after a log transformation (base 10). The model is, therefore, estimated using the transformed variable. The logged ratios are denoted *LRATIOE* and *LRATIOS*.

Table 7.

A: Cross Sectional Regression of Information Asymmetry Variables on Pairwise Differences Forecast Errors of EPS and Sales (*t*-values in parentheses)

$$\text{MODEL: } DIFFEPS(DIFFSALES)_{it} = \alpha_0 + \alpha_1 FCAP_{it} + \alpha_2 AFFIL_{it} + \alpha_3 LOB_{it} + \alpha_4 TOTASS_{it} + \alpha_5 TIME_{it} + \varepsilon_{it}$$

	INTER	*FCAP*	*AFFIL*	*LOB*	*TOTASS*	*TIME*	*Adj.* R^2	*N*
DIFFEPS	–37.15	0.71	–0.0016	–1.71	6.61	–0.01	0.01	212
	(–1.22)	(1.98)	(–0.02)	(–0.85)	(1.40)	(–0.32)		
DIFFSALES	–3.58	0.0004	–0.02	–0.35	0.90	–0.0016	0.10	212
	(–2.02)	(0.02)	(–3.02)	(–3.03)	(3.28)	(–0.71)		

B: Cross Sectional Regression of Information Asymmetry Variables on the Log Ratio of Japanese Analyst Forecast Errors to U.S. Analyst Forecast Errors of EPS and Sales (*t*-values in parentheses)

$$\text{MODEL: } LRATIOE\ (LRATIOS)_{it} = \alpha_0 + \alpha_1 FCAP_{it} + \alpha_2 AFFIL_{it} + \alpha_3 LOB_{it} + \alpha_4 TOTASS_{it} + \alpha_5 TIME_{it} + \varepsilon_{it}$$

LRATIOE	0.36	0.05	0.003	–0.29	5.74	0.001	0.04	212
	(0.60)	(2.50)	(0.75)	(–2.35)	(1.45)	(0.43)		
LRATIOS	–3.91	0.001	–0.01	–0.34	0.75	–0.004	.01	212
	(–1.77)	(0.48)	(–2.16)	(–2.35)	(2.20)	(–1.39)		

Notes: *DIFFEPS* (*DIFFSALES*) is the difference in matched earnings (sales) forecast errors
LRATIOE (*LRATIOS*) is the log of the ratio of the squared earnings (sales) forecast errors of Japanese analysts divided by the squared earnings (sales) forecast errors of U.S. analysts
FCAP is the percentage of foreign ownership; *AFFIL* is the number of domestic affiliates
LOB is the number of lines of business; *TOTASS* is the amount of total assets
TIME is the publication lag in days between forecasts of the U.S. analysts and the Japanese analysts

Test Results

Table 6 provides summary statistics on the variables used in the regression above. The table shows that on average 12 percent of the firm is held by foreign investors. The number of domestic affiliates ranges from 6 (10th percentile) to 53 (90th percentile). By contrast, there is less variation in the number of lines of business, ranging from 3 (10th percentile) to 6 (90th percentile). The *TIME* variable denoting the difference in publication dates is as noted earlier, positive (mean = 43 days) for the automotive firms and negative for the non-automotive firms (mean = -10days). Finally, Table 6 provides the distribution summary on *LRATIOE* and *LRATIOS*. A negative value for these variables indicates that Japanese analysts'forecasts are more accurate. The table shows that the median and mean values of *LRATIOE* are negative only in some of the four quarters. By contrast, the median and mean values of *LRATIOS* are consistently negative in each of the four quarters. This supports earlier findings which showed stronger results on Japanese analysts' forecast superiority with regard to sales.

Regression results are in Table 7. Panel A reports results where the dependent variables are *DIFFEPS* and *DIFFSALES*, while Panel B uses *LRATIOE* and *LRATIOS*. The results provide support for the hypotheses. When *DIFFSALES* and *LRATIOS* are used as dependent variables, the coefficients on *LOB* and *AFFIL* are negative and statistically significant. This supports the hypotheses that Japanese analysts'informational

advantage is likely to be higher for firms with more lines of business and domestic affiliates. The coefficients on *TOTASS* and *FCAP*[34] are positive, indicating that Japanese analysts' superiority decreases with firm size and outside ownership. These results support Bhushan (1989) and Wu (1993) who suggest that there is more analyst scrutiny for large firms and firms with greater outside ownership. The intercept term captures the effect of variables omitted from the regression. It is significant (marginally significant) when the dependent variable is *DIFFSALES* (*LRATIOS*), indicating that there may be other reasons for Japanese analysts' forecast superiority with regard to sales. The remainder of the variables are insignificant. A final point of interest is that the regression which uses *DIFFSALES* has significantly more explanatory power (approximately 10 %) than the one where *LRATIOS* is used (approximately 1%).

When the dependent variables in the regression are *DIFFEPS* and *LRATIOE*, only the coefficient on *FCAP* is significant in both the regressions.[35] Consistent with the hypothesis, the coefficient on this variable is positive, indicating that as the level of foreign scrutiny increases, relative forecast superiority of the Japanese analyst decreases. Interestingly, this variable was positive, but was not significant in its association with the dependent variables in the preceding paragraph, suggesting that foreign scrutiny reduces informational asymmetry with regard to earnings more so than with sales.[36]

CONCLUSION

This study finds that Japanese analysts provide superior forecasts of sales when compared to their U.S. counterparts. Their relative superiority cannot be attributed to any timing advantage. It appears, therefore, that the results reflect an informational advantage possessed by Japanese analysts. Selected variables were used to describe the information environment where the Japanese analyst would potentially have such an informational advantage. Results showed support for the hypotheses. Specifically, they showed that as the number of lines of business and domestic affiliates (firm size) increased, the relative sales forecast accuracy of the Japanese analyst also increased (decreased). Interestingly, percentage of foreign ownership was strongly related only to relative earnings forecast accuracy; as the outside ownership increased, the relative advantage of the Japanese analyst decreased.

There is considerable evidence that analysts' forecasts are used by capital market participants in assessing firm value (Brown et al., 1987a). This study, therefore, contributes by comparing forecasts provided by two respected groups of forecasters. The results here also suggest that investors interested in foreign stocks may be informationally disadvantaged if they do not familiarize themselves with capital market norms and culture of the foreign country. Finally, the results here have implications for the harmonization of accounting standards. As noted earlier, most of the sampled firms have harmonized their financial reporting to U.S. GAAP. Despite this, the evidence provided shows significant differences between two prominent market groups in forecasting firm value. It suggests that the problem of accounting diversity cannot be completely removed through harmonization of accounting practices.[37] A limitation of the study is that the sample for which both Japanese and U.S. forecasts are available is small. Our results, therefore, may not be generalizable to other samples. It is to be

noted, however, that the firms examined are of great prominence and enjoy high visibility in the international business arena. The findings of the current study are, therefore, of great interest.

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NOTES

1. Both O'Brien (1990) and Sinha et al. (1994) use Institutional Brokers Estimation System (I/B/E/S) forecasts.
2. When making their respective forecasts, for example, the Japanese analyst might have knowledge of an informational event of which his/her U.S. counterpart might learn much later.
3. A third possible reason for expecting Japanese analysts' forecast superiority is based on the view that Japanese analysts are more likely than U.S. analysts to obtain access to private information about the firm. Jacobson and Aacker (1993), for example, state that Japanese corporate officials "share" information about the company's future performance with selected individuals, institutional investors, bankers and analysts. Imhoff (1990), Hamada and Ishiguro (1992), Sakakibari, Yamaji, Sukurai, Shiroshita and Fukuda (1988), and others also suggest that the use of insider information by brokerage houses is widely prevalent due to poor enforcement of insider trading laws. Our data does not permit us to examine whether it is the use of private or public information that is "causing" more accurate forecasts.
4. U.S. investors are increasingly investing in Japanese stocks. The Securities Industry Association based in New York, reports in its quarterly bulletins titled *Foreign Activity: An Analysis of Foreign Participation in Securities Markets* that net purchases of Japanese stocks by U.S. investors increased from $950 million in 1983 to $6,224 million in 1993.
5. One prominent institution favoring harmonization is the U.S. Securities and Exchange Commission which is concerned that U.S investors will be misled by accounting numbers reported under foreign GAAP (see, for example, Fuerbringer, 1992; Jarrell, 1992; Harris, Lang and Moller, 1993.)
6. Consolidated amounts were used because U.S. analyst forecasts were only available for consolidated earnings and sales. Because consolidated annual accounts represent the financial results of the firm and its afffiliates, they are more likely to reflect the informational asymmetries that exist with regard to transactions between the firm and its affiliates.
7. Prior to 1987, *JCH* provided only semi-annual forecasts.
8. The two groups are matched with regard to reputation and expertise so that differences in forecast accuracy can be attributed to other factors, such as informational asymmetry.
9. The first forecast for Nissan (Toyota) was published on September 22, 1989 (December 22, 1989).
10. The matching procedure controls for the length of the interval betwen the forecast and the earnings announcement which affects forecast accuracy.
11. The summer issues are sometimes published in the last week of April.
12. This happened only for three firms in the sample for which we had five forecasts on the *VL* for a given year because of a fiscal year change and four on the *JCH*; the next year's *VL* sometimes had only three forecasts.
13. It is usually not practical for foreign investors to buy shares of Japanese firms because stock certificates are not permitted to leave the country. Instead, investors purchase American Depository Receipts (ADRs). ADRs are the basis of trade for Japanese and other non-U.S. stocks in the U.S. Foreign firms deposit their shares with a U.S. Depository Bank, which then

issues ADRs. These ADRs are expressable as a multiple of issued shares (given by the ADR to Share Ratio).

14. Only in the case of Nissan, we found forecasts that were not consistent with regard to GAAP used; the U.S. analyst in a few cases was forecasting earnings under U.S. GAAP while his/her Japanese counterpart was forecasting earnings under Japanese GAAP. These forecasts were discarded.
15. The sales and earnings per ADR in *VL* were reconciled with those in *JCH* and in *Moody*'s.
16. In a telephone conversation with the author, a Japanese analyst of Toyo Keizai disagreed with this conclusion. He pointed out that Toyo Keizai was an independent firm whose primary function was to provide accurate forecasts. The analyst, however, provided no explanation as to why his/her firm's forecasts were on average optimistic. Analysts of Value-Line were unavailable for comment.
17. Because the statistics in Table 2 are based on the algebraic value of the analysts' forecast errors, they are inappropriate for testing the hypothesis of forecast superiority. A smaller mean forecast error for one analyst group, for example, does not necessarily suggest that this group makes more accurate forecasts. Rather, it could be that this analyst group had both large positive and large negative forecast errors in a given period which "cancelled" each other resulting in a smaller mean forecast error.
18. The matching procedure was described earlier in the last section.
19. Four quarters times six years.
20. As noted in Stickel, the test statistic is assumed to have a Student *t* distribution with 23 degrees of freedom.
21. While there is no exact answer to the question, "how large is large," it is generally agreed that in most situations a sample size of 50 observations can be used to obtain a good approximation of a normal distribution (Strait, 1983). The small sample size problem, therefore, is of lesser concern for the results in Table 4 which use samples of more than 50 observations.
22. While we have 12 firms in our sample, the tests in Table 3 use 24 observations (four quarters times six years).
23. A cross-sectional regression is used to examine the source of Japanese analysts' forecast superiority. This test is included to reduce the concern that the superior predictions documented occur merely by chance. In the next section we provide one explanation as to why evidence of forecast superiority is more likely to show up in sales forecasts than in earnings forecasts.
24. These facts were obtained from Mr. Ekkelberg, the Marketing Director of *Value-Line* and Ms. Kawsharo, the New York sales representative of Toyo Keizai. Ms. Kawsharo informed us that the Japanese version of the *JCH* is published one month prior to the English version (i.e., the translation from Japanese to English takes *JCH* a month). The publication date of the English version was used in this study. Forecasts are made by Japanese analysts about two weeks prior to the publication date of the Japanese version.
25. The small sample problem also applies to these tests.
26. For the non-automotive firms, results would also be biased against the Japanese analyst in another significant way. The U.S. analyst could use the Japanese analyst's report in making his/her own forecast and thus outperform the Japanese analyst.
27. Sales, for example, have a greater covariation with industry wide and market movements than do earnings.
28. Lowe notes several of these member firms are as large as those on the Fortune 500.
29. Jacobson and Aacker also point out the potential for the use of insider information as it relates to transactions between the affiliates of a corporate group. These authors state that "business alliances and transactions allow access, both within and outside the company groupings to inside information. While firms within a corporate grouping usually do not choose to trade shares of other group members for their own account, this information becomes available to other investors who tap into the network and actively trade on the stock market."
30. U.S. studies show mixed results for the *LOB* variable. Brown et al. (1987b) and Kross, Ro and Shroeder (1990) find that the *LOB* variable lacks power in explaining forecast superiority. However, Branson and Pagach (1993) find that there is a significant positive relation between forecast superiority and *LOB*.

31. Wu (1993) and Rozeff (1981) among others have used outside ownership to proxy for degree of scrutiny or monitoring.
32. We also defined *TIME* as the lag between *VL* and *JCH* forecast dates, with no change in results.
33. Similar to Brown et al. (1987b) the models below assume that the error variance is constant over year and quarter.
34. Coefficient on *FCAP* is not statistically significant.
35. This does not contradict earlier results where no significant differences were found in the *mean* values of *DIFFEPS* between analyst groups. On the contrary, the regression above explains cross-sectional variation in relative forecast accuracy (i.e., it explains why there is potentially no difference between mean forecast errors of the two analyst groups.)
36. Recall that *FCAP* was used to proxy for outside scrutiny. Wu (1993) finds that as outside scrutiny increases, opportunities for revenue management decrease. The results associated with *FCAP* are to be expected, therefore, because as pointed out earlier earnings are more vulnerable to management than sales.
37. Choi and Levich (1991) argue that local culture and norms greatly influence the standard setting processes of each country. They suggest that each country adopts accounting standards and coping mechanisms that "reflect the historical structure of a country's regulatory environment, the relationship that each regulatory body has with its contituencies and other capital market norms unique to each country." In their view, therefore, harmonization only leads to an artificial restatement of financial results.

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An Examination of Attitudes Involving Cash Flow Accounting: Implications for the Content of Cash Flow Statements

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Key words: Cash flow, cash flow statements

Abstract: *This research surveyed the attitudes of financial analysts, investment advisors, accounting professors and accountants (public and private) towards certain cash flow accounting (CFA) disclosures that extend beyond the requirements of the various international cash flow pronouncements discussed in this paper. In general, the financial analysts and investment advisors were significantly more receptive toward the role of CFA in external financial reporting than were the other two groups. Both the financial analysts and the investment advisors were supportive of the proposal for the disclosure of the accounting number "operating cash flow per share" in annual reports. The findings suggest that perhaps in the U.S., the SEC and the FASB should allow more latitude in the reporting of CFA and permit this disclosure. The results are also relevant on an international level to countries that are either reviewing their cash flow reporting requirements or involved in initial deliberations involving cash flow statements.*

In the past decade, cash flow reporting requirements have attracted increased attention on an international scale. For example, the following countries have all issued accounting standards requiring cash flow statements (the year of issuance is in parentheses): Canada (1985), New Zealand (1987), United States (1987), South Africa (1988), United Kingdom (1991) and Australia (1991). Furthermore, International Accounting Standards No. 7 (IAS 7), *Cash Flow Statements*, was approved in October, 1992.[1]

However, as illustrated in Table 1, there are different formats and flexibilities among countries as to the disclosure of the cash information reported. Accordingly, this paper examines the attitudes of several segments of the U.S. financial community towards various types of proposed cash flow disclosures. It also measures their perceptions regarding the utility of cash flow from operating activities as compared to net income in evaluating economic performance. The study goes beyond the extant requirements of U.S. and other international

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Table 1. Comparative Cash Flow Disclosures

Country Or Authoritative Body	*U.S.*	*U.K.*	*AUSTRALIA*	*International Accounting Standards Committee*
Name of Requirement	*FASB 95) Statement of Cash Flows*	*(FRS 1) Cash Flow Statements*	*(AAS 28 AASB 1026) Statement of Cash Flows*	*(IAS 7) Cash Flow Statements*
Format of Operating Cash Flow	Direct Method Recommended Indirect Method Authorized	Direct Method Reported on a Net or Gross Basis*	Direct Method Required	Direct Method Recommended Indirect Method Authorized
Cash Flow Forecasts	No Reference	No Reference	No Reference	No Reference
Operating Cash Flow Per Share Disclosure	Prohibited	No Reference	No Reference	No Reference
Free Cash Flow Disclosure	No Reference	No Reference	No Reference	No Reference

Notes: * In addition, a note should provide a reconciliation between the operating profit and net cash flow from operating activities (the indirect method).

accounting promulgations involving cash flow accounting (CFA) in an effort to determine if additional CFA information is desired in substance and/or form. For the purposes of comparison, various aspects of CFA disclosures that are investigated in this paper are depicted in Table 1 for the following countries or accounting standard setting bodies: the U.S., U.K., Australia, and the International Accounting Standards Committee, and are referenced in chronological order.

The U.S. cash flow requirement is Statement of Financial Accounting Standard No. 95 (FAS 95), *Statement of Cash Flows*, and was released in November, 1987. More recently, in September, 1991, the Accounting Standards Board (ASB) of the United Kingdom issued Financial Reporting Standard No.1 (FRS 1), *Cash Flow Statements*, superseding Statement of Standard Accounting Practice No. 10 (SSAP 10), *Statements of Source and Application of Funds*. In Australia, accounting standards AAS 28 and AASB 1026, "*Statement of Cash Flows*" were issued in 1991 and became operational for fiscal periods ending on or after June 30, 1992. Lastly, IAS 7 was approved in October, 1992 and became effective January, 1994. It supersedes IAS 7, *Statement of Changes in Financial Position.*

The paper begins with a discussion of relevant CFA research and cash flow advocates, and continues with the motivation for the research. The last three sections contain the research design, the discussion of the results, and the summary and conclusions.

RELEVANT RESEARCH AND CASH FLOW ACCOUNTING ADVOCATES

Although the international movement towards requiring the disclosure of CFA information is fairly recent, many international researchers have long studied certain facets of it in the context of its use in evaluating financial performance. As an example, in a study of histor-

ical cost versus cash flow accounting numbers involving U.K. manufacturing firms for the period 1954-1976, Lawson (1981) found evidence, among other things, that the historical cost numbers resulted in an overstatement of the coverage of interest payments, dividends had been significantly uncovered, and a debt-equity substitution had occurred that resulted in a decline in the quality of cash flow earnings (pp. 25-26). As a result of his analysis Lawson cautioned:

> multiperiod cash-flow performance is a feature of corporate sector life which can only be ignored by accountants at their peril. In not fully understanding the inherent tendency of historic cost profit consistently to exceed cash-flow earnings, U.K. accountants have also generally failed to recognize the permanent threat to corporate financial viability (and corporate continuity) posed by historic cost-based decisions at the corporate level, not to mention the clear implications from a managerial decision-making standpoint (p. 43).

Many CFA proponents argue that much of its relevance stems from reporting entities' arbitrary cost allocations. Thomas (1969, 1974) argues that such allocations are "incorrigible" in the philosophical definition of an assertion that is impossible to verify or falsify. As a result, he states that adjustments, such as the addition of noncash expenses, are necessary before the economic performance of an entity can be measured.[2] For instance, Drebin (1964), illustrated a classic example of the allocation problem through an examination of U.S. Steel's 1962 decline in profits and the subsequent chain of events it precipitated. The profit decrease was actually due to a liberalization of Internal Revenue Services (IRS) regulations, allowing for larger depreciation charges and less income taxes. The firm reduced its dividend in the final half of 1962, urged labor unions to restrain wage demands, and pleaded with government to allow a price increase. Although U.S. Steel blamed the taxing basis for the earnings decline, the cash flow of the firm, as well as its "real" economic status, was actually enhanced by the IRS ruling.

An additional argument for CFA analysis is that these accounting numbers are often a better indicator of a firm's ability to finance capital maintenance requirements and other demands for resources than are either historical cost net income or working capital. Lee (1982a) demonstrated that although Laker Airways always showed an historical cost profit, an analysis of its cash flow showed that cash "in flow" from operations was decreasing while borrowing was increasing. The bankers, relying on the historical cost figures, deemed the firm profitable even though little cash was left to repay borrowings. Lee posited that had CFA analysis techniques been used, Laker Airway's bankers would have been alerted to its problems. More recently, when the ASB released FRS 1, it demonstrated how the statement would have affected the firm Polly Peck's 1989 financial statements. The trading profit of £139 million was converted into a net cash outflow from operations of £129 million, although a similar exercise applied to the 1989 results of the Brent Walker's accounts before its collapse, did not also signal a disaster due to a dearth of cash (Singleton-Green, 1991, p. 22).

In a comparison of the usefulness of cash flow versus working capital, Largay and Stickney (1980) offer the case of the bankrupt department store, W.T. Grant. Despite the fact that the firm generated what appeared to be sufficient amounts of working capital, much of it was tied up in accounts receivable and inventories not producing enough

cash resources to cope with operating demands. As in the instance of Laker Airways, an analysis of operating cash flow from operations would have underscored this fact.

On a more theoretical plane, Staubus (1989, p. 165) argues that CFA is not suitable for measuring income and wealth, in large measure due to the opportunity to manipulate income if it is measured by cash flow. Staubus cites the examples of such discretionary expenditures as R & D and training costs that could be incurred to manage earnings and he stresses that cash transactions with suppliers and customers could be manipulated with even greater facility. As a result, Staubus concludes that the paramount benefit of CFA is its value in assessing an entity's liquidity.

Yet other advocates such as Ferrara (1981) and Ijiri (1980) argue that CFA should also be extended to internal performance evaluation. They maintain that the primary variable in investment decisions is usually cash flow, while in performance evaluation, historical cost earnings is employed. Hence, they conclude that accrual accounting should be converted to cash flow for performance measurement. A failure to do so, they reason, results in a lack of congruence between managerial decisions and their performance accountability.

Primarily because of these and other perceived inadequacies of historical cost accounting, various authors, including Thomas (1969, 1974) and Reeve (1985) have either proposed that the historical cost income concept be abandoned in favor of CFA, or that the accounting numbers be extended to include more cash flow performance measures. Security analysts have extracted such cash flow data in their analysis for some time now, even calculating the statistic "cash flow per share". For example, Previts, Bricker, Robinson and Young (1994) studied 479 financial analyst reports and found, on average, cash flow phrases approximately 7.5 times per report and that many analysts produce non-generally accepted accounting principles (GAAP) cash flow schedules, including those of discretionary or free cash flows. They also found cash flow per share (usually operating) in approximately one third of the reports. Various other per share cash statistics were labeled "fully diluted," "distributable," "discretionary," and "free." Another use of CFA numbers by security analysts is described by Walker and Robinson (1994, p. 131) who state that some Australians view cash reports as "an antidote to creative accounting" because a juxtaposition of accrual income and cash flow from operations allow them to detect anomalies.

Although the U.S. accounting profession's traditional attitude has been to manifest a disaffection for such cash flow analysis, fearing that information users might embrace an ersatz income measure, Thomas (1969, p. 101) argued that any problem associated with CFA was not due to the form of the analysis, but rather the accounting numbers themselves provided under the historical cost system; "One's reaction to cash flow accounting should be similar to one's reaction to 'bootleg' bookkeeping (which it resembles): as a symptom of possible inadequacies of the official system, not as something reprehensible." As an example of the promotion of accrual accounting numbers in financial analysis in relation to CFA, the Financial Accounting Standards Board (FASB) states that historical cost accounting numbers are superior to cash measures in predicting future cash flows (FASB, 1986, p. 2). However, studies by Bowen, Burgstahler and Daley (1986) and Finger (1994) do not support this notion. Furthermore, in a study of 403 U.S. firms over a ten year period, Charitou and Ketz (1991) found a significant relationship between several cash flow measures and the market value of the

Table 2. Selected Demographic Data

1. Years of Experience

Population	*Average Years*	*Standard Deviation*
College Professor	14.67	8.00
Financial Analyst	17.44	8.67
Investment Advisor	12.40	9.51
Accountant	17.33	10.14

2. Accountant Employment Category

Category	*Number*	*%*
Public	92	60.9
Industry	37	24.5
Other	22	14.6
Total	151	100.0

firm. These findings are apparently not specific to U.S. capital markets, however, for Arnold, Clubb, Manson and Wearing (1991) conducted a similar study of firms listed on the London Stock Exchange and concluded that their analyses provided similar results to those of Bowen et al.; U.K. earnings did not prove to be superior to cash flows as predictors of future cash flows. In addition, cash flow reporting was initially opposed by the Australian accounting profession. Walker and Robinson (1994) describe the chain of events involving the change from official support for the funds statement to the eventual release of the cash flow standard, AASB 1026. A significant influence in this process was the fact that security analysts paid greater attention to cash flows due to corporate failings after the 1987 stock market crash.

MOTIVATION FOR THE STUDY

Given this background, the objective of this paper is to examine the attitudes of several segments of the financial community towards CFA. The scope of the study goes beyond the requirements of FAS 95 and the international pronouncements cited, however, and explores perceptions involving various dimensions of cash flow information not currently provided, including operating activities on a per share basis, cash flow forecasts, and a "free cash flow"[3] statement.

The study is further motivated by the hypothesis that CFA information, in certain analyses, is perceived as equal to or sometimes more meaningful than historical cost income figures measured in accordance with GAAP. For example, in addition to the arguments cited previously by academic CFA advocates, cash flow analysis has been and currently is widely utilized by professional security analysts and money managers. One U.S. management team (Melvin Turkman and Daniel Grossman) whose portfolio ranked them first among 474 managers in 1990 and first among 261 managers for the five years through 1990 (according to CDA Investment Technologies) stated that a firm must have a large "free cash flow", as a prerequisite for acquisition (Dorfman, 1991,

p. C2) Another example occurs in an investment analysis report appearing in a U.S. common stock advisory publication, *Value Line*. Referring to the takeover of the U.S. fast food company, Jerrico Inc., the analysis made no mention of price earnings multiples influencing the acquisition price. Rather, the report focused on a pretax cash flow multiple (Openshaw, 1989, p. 306).

Moreover, there is a 288 page work titled *Cash Flow and Security Analysis* (Hackel and Livnat, 1992) which states that its methods can identify undervalued firms and likely takeover targets. The book also advertises that it explains "why accounting regulators are gearing investors toward cash flows analyses and away from accrual accounting" (*Wall Street Journal*, 1992, p. A7). In addition, two U.S. common stock analysis publications, *Value Line* and *Standard and Poor's Stock Reports* provide a "cash flow per share" statistic as a standard part of their analyses.

Besides these examples of the use of nontraditional CFA information, the notion of "free cash flows" has been made prominent largely due to Jensen (1986). He developed a free cash flow hypothesis that asserts that conflicts exist between stockholders and managers over free cash flow distributions. Jensen states that managers attempt to retain cash and allow the corporate entity to grow beyond its optimal size due to such reasons as increasing management power and compensation while stockholders desire dividends. Jensen further argues that free cash flow distributions also impact their firms' security prices. Lang and Litzenberger (1989) found that, consistent with Jensen's free cash flow theory, firms categorized as over investors had significantly higher security returns associated with announcements of dividend increases than for value maximizing firms. In a study of publicly traded firms that went private, Lehn and Poulsen (1989) found a significant relationship between undistributed free cash flow and the probability of going private. They also found that the premiums paid to shareholders in these events are positively and significantly related to free cash flow. Since the concept of free cash flows is now widely used in investment analysis, a statement involving a proposal for its disclosure in annual reports was included in the current study.

The items listed on the questionnaire (Tables 3 and 4) were chosen either because of their importance in the past studies of Lee (1981) or McEnroe (1989), or due to arguments offered by CFA advocates. In addition, a major focal point involving several of the items listed on Table 3 relates to a primary difference between disclosures allowed under both FRS 1, AAS 28 and AASB 1026, and IAS 7, but prohibited in FAS 95. In contrast to the former pronouncements, the latter pronouncement does not permit the presentation of cash flow per share (consistent with its predecessors, APBs 3 and 19).[4] In its "Basis for Conclusions" section contained in the appendix of FAS 95, the FASB attempted to justify the prohibition by maintaining that per share disclosure "would falsely imply that cash flow, or some component of it, is a possible alternative to earnings per share as a measure of performance" (FASB, 1987, par. 122). The Board had made essentially the same statement earlier in the body of the Standard. However, no empirical or even anecdotal evidence was provided for the several FASB admonishments regarding the purported confusion such disclosures might create for "investors, creditors, and others..." (par 123).

Furthermore, the Board stated that the majority of the respondents to the exposure draft of FAS 95 *who addressed the issue* (emphasis added) agreed that cash flow per

Table 3. Perceptions Towards Cash Flow Information

	Very Strongly Agree	*Strongly Agree*	*Agree*	*Uncertain*	*Disagree*	*Strongly Disagree*	*Very Strongly Disagree*	*Significant Differences Between Groups+*
1. Cash flow from operating activities should be required				4.12*	3.79A			FA and P, A
on a per share basis in annual reports.			5. 10 FA	4.96IA	3.82P			IA and P, A
2. A cash flow from operating activities statement					3.53P			FA and P, A
should be show directly next to the income statement in					3.57A			IA and P, A
the annual report. (Side by side with the income state-				4.34FA	3.78*			
ment).				4.58IA				
3. A cash flow forecast should be included as part of the					3.58A			FA and A
external financial statements.					3.72P			IA and P, A
			5.23IA	4.36FA	3.89*			
4. Cash flow accounting should completely replace his-								FA and P, A
torical cost accrual accounting as the basis for financial					3.23IA	2.17A		IA and P, A
reporting.					3.69FA	2.43*	1.91P	
5. Cash flow from operating activies is a more meaning-					3.00A			FA and P, A
ful number than netincome from operations in evaluat-					3.07P			IA and A
ing the economic performance of a firm.					3.32*			
				4.34FA	3.92IA			
6. At the present time. historical cost net income is an				4.00IA				A and P, FA
adequate income measurement indicator of a firm's eco-				4.08*	3.70FA			
nomic performance.				4.35A	3.74P			
7. A statement of "free cash flows" (cash flow from				4.00A				FA and P, A
operating activities less capital expenditures and divi-				4.16*				IA and P
dends) should be included in the annual report.				4.65IA				
				4.97FA	3.66P			

Notes: * = Overall Mean Score for all Groups, FA = Financial Analysis, IA = Investment Advisors, P = College Professor, A = Accountant, n = 282, + Significance level = .05

Table 4. Cash Flow Format and Utility to Users

The statement of operating cash flows should be presented via the following format:	Indirect Method	43.9	
	Direct Method	56.1	
		100.0%	
Potential utility to users of:			
A.	*Past Cash Flow Data*		
	Useful	*Not Useful*	*No Opinion*
Bankers	88.9%	7.2%	3.9%
Lenders	93.9%	2.5%	3.6%
Institutional Shareholders	81.7%	7.6%	10.8%
Private Shareholders	70.3%	17.6%	12.2%
Employees	48.0%	34.1%	17.9%
Suppliers	66.5%	19.1%	14.4%
Government	37.6%	38.7%	23.7%
Customers	35.1%	43.4%	21.5%
Financial Analysts	86.1%	7.9%	6.1%
Investment Advisors	89.6%	5.7%	4.7%
B.	*Cash Flow Forecasts*		
Bankers	83.8%	8.3%	7.9%
Lenders	85.7%	5.7%	8.6%
Institutional Shareholders	69.9%	15.8%	14.3%
Private Shareholders	58.4%	24.4%	17.2%
Employees	37.3%	39.8%	22.9%
Suppliers	55.2%	26.2%	18.6%
Government	28.0%	45.9%	26.2%
Customers	28.2%	46.1%	25.7%
Financial Analysts	79.6%	9.0%	11.5
Investment Advisors	80.4%	9.5%	10.1%

share should not be reported (par. 125). Despite these arguments on the part of the FASB for selected CFA censorship, accounting information users might desire per share operating cash flow as an indicator of the ability to fund common stock dividends. Accordingly, Statement 1 asked if the populations surveyed do in fact desire the per share calculation. The concerns of the FASB are also germane to the development of other international accounting standards, especially in the area of cash flow disclosures. For example, some parties view France's cash flow pronouncement as "a simple translation of the American 'Statement of Cash Flows' standard rather than the product of a development process which was appropriate to the specific characteristics of French accounting" (Stolowy and Walser-Prochazka, 1992, p. 186).

Although Lee (1981) conducted a survey involving attitudes towards CFA of chartered accounts in Scotland, and McEnroe (1989) of U.S. audit partners, the current study goes beyond these populations and includes (U.S.) public and private accountants, accounting professors, registered investment advisors and chartered financial analysts. The primary objective of the study was to ascertain if these populations desire additional CFA information in substance and/or form. The research also measures their

perceptions regarding the utility of cash flow from operating activities versus net income in financial analysis. These populations were selected due to the fact that:

1. They are all knowledgeable as to the nature of accounting principles and terminology; and
2. Each represents a different type of stakeholder in the domain of financial reporting.

If the findings do, in fact, indicate a desire for more and alternate types of cash flow information, these preferences should be awarded considerable weight in any U.S. or other international accounting promulgating body's deliberations in the area of CFA, with particular attention devoted to an examination of the necessity and rationale supporting any extant prohibitions involving CFA disclosures.

RESEARCH DESIGN

A random sample of 200 individuals was selected for each of the first three populations listed below, and a total of 800 for the accountants. The operational definition for each group was as follows:

- *Financial Analysts*—holders of the Certified Financial Analyst certificate.
- *Investment Advisors*—individuals listed in the official roster of Registered Investment Advisors.
- *Accounting Professors*—members of accounting faculties at U.S. universities at the rank of assistant professor or above.
- *Accountants*—individuals listed as accountants on the schedule provided by Research Projects Corp. of Woodbury, Connecticut and who also indicated their occupation as such on the research instrument.

Since the accountant population was not identified by specialty on the acquired population list, a larger sample (800) was taken for this group than the others in order to achieve a large enough number of responses from public accountants as well as those working in industry and government to ensure meaningful representation from each of these different categories. The respondents were asked to react to the seven statements appearing in Table 3 by indicating the extent of their agreement with each of the items, ranging from "very strongly disagree" to "very strongly agree," the midpoint being the category, "uncertain." For the purpose of statistical analysis, the categories were valued from one to seven, with "very strongly disagree" representing the low and "very strongly agree" the high value.

DISCUSSION OF RESULTS

A total of 282 questionnaires were received; the number returned by each population, those not returned as undeliverable, and the corresponding usable response percentages were as follows: professors; 58/200 = 29%, chartered financial analysts; 47/186 = 25.2%, investment advisors; 26/157 = 16.5%, and accountants; 151/712 = 21.2%. Patton (1978, p. 412) indicates that a 25% response rate is typical of mail surveys. Since the overall response rate for this

survey was 282/1255 = 22.5% (close to the 25% average), the response rate was deemed adequate, although the low return rate of the investment advisors is considered a limitation of the study.

Certain demographic data are contained in Table 2, including years of experience and the employment categories of the accountants. As the numbers indicate, the respondents, on average, had a considerable amount of experience, ranging from a low of 12.4 years for the investment advisors to 17.4 years for the financial analysts. A review of the accountant category data shows that 60.9% of these respondents came from public accounting, 24.5% from industry, and 14.6% from other areas (mostly government).

The mean scores are presented for each population in Table 3 by item, as well as the overall mean for all respondents. In order to present a perspective of the responses, the mean scores are placed under the response category to which they most closely relate. The right side of the table indicates which population mean scores are significantly different at the .05 level, employing the Scheffe procedure (Winer, 1971, pp. 198-199).

It should be noted that a common problem associated with mail surveys is that of potential nonresponse bias. Various techniques have been suggested in the psychometric literature (i.e., Kanuk and Berenson, 1975; Hawkins, 1975) to measure the extent of nonresponse bias. In the current study, potential nonresponse bias was tested through the "wave analysis" technique; the mean responses of individuals received after a certain cutoff date were compared (by population and item) to those received before that date, and very few indicated a difference at the .05 level. Thus, there was no evidence to conclude that nonresponse bias imposes a serious constraint on the validity of the findings.

Statement 1 relates to the requirement of cash flow from operating activities on a per share basis. As mentioned previously, the two prominent investment U.S. analysis reports present "cash flow per share" (operating cash flow) while the FASB, in contrast to its international counterparts, has prohibited its disclosure. The financial analysts supported the notion most strongly, while the accountants and professors were the most opposed. The results may stem from the influence of the latter two group's indoctrination to GAAP. Furthermore, the results do not agree with the limited sample cited by the FASB who stated in their response to the exposure draft that cash flow per share should not be reported. A key difference between this study and the responses to the FASB exposure draft is that the former is biased by self selection (those parties who tend to take the initiative to correspond with the FASB) while the current study's sample does not impose such a constraint.

Statement 2 proposes that a cash flow from operating activities statement be shown adjacent to the income statement (this format originated from a recommendation by Ketz and Largay, 1987). On average, however, the respondents tended to perceive this as unnecessary. Statement 3 examines the somewhat controversial idea of providing a cash flow forecast in the financial statements. Although the investment advisors were agreeable to this concept, the other groups were either uncertain or opposed. Statement 4 was somewhat contentious in nature, proposing the complete substitution of accrual accounting by CFA. This item received the lowest mean score of all (2.43), which places it in the "strongly disagree" response area. Thus, despite the multitude of criticisms that historical cost accrual accounting has sustained over the years, it is still regarded by the respondents as a necessary component of financial reporting. The state-

ment was designed to examine how extreme the perceived usefulness of CFA is and merely confirms the fact that knowledgeable individuals perceive accrual accounting to be an integral part of financial reporting.

Statement 5 examines the question of whether operating cash flow is perceived as more meaningful than historical cost net income in evaluating a firm's economic performance. The respondents tended to disagree and by their reaction indirectly reaffirmed their support of historical cost accounting (consistent with their responses to Statement 4). Again, this finding tends to attenuate the FASB's concern over the potential misinterpretation of the role of cash flow information in the evaluation of an entity's economic results. When polled as to the adequacy of historical cost net income in measuring economic performance however, (Statement 6), the respondents tended to disagree or express uncertainty. Thus, despite the defense of historical cost accounting evidenced by the responses to Statements 4 and 5, historical cost net income is not evidently perceived to be an optimal measure of an enterprise's performance. The last item (Statement 7) relates to Jensen's (1986) concept of "free cash flows." A review of the mean scores indicates that the respondents were largely uncertain as to whether such a schedule is desirable. The greatest desire for the calculation came from the financial analysts and investment advisors.

A review of the aggregate responses reveals that the financial analysts and investment advisors are more responsive to the concept of CFA and its role in external financial reporting than are the other two populations. In fact, in five of the seven statements, the financial analysts had significantly higher mean scores than did the accounting professors and the accountants. This was also true in the case of the investment advisors for four of the seven statements.

The first item listed in Table 4 relates to the format of the presentation of operating cash flows. Fifty-six percent of the respondents favored the direct method, while approximately 44% expressed a preference for the indirect format. These percentages are almost opposite those contained in the McEnroe (1989) study, where approximately 57% chose the indirect method and 44% the direct format. Either format is permissible in the U.S. under FAS 95 and in IAS 7, although both pronouncements recommend the direct method. In New Zealand, Australia (AAS 28 and AASB 1026), and the United Kingdom (FRS 1), the direct method must be used, with Canada allowing either and France recommending the indirect. (Stolowy and Walser-Prochaska, 1992.) It is also interesting to note that two of the FASB members dissented to FAS 95 in part due to its flexibility in allowing the use of the indirect method.

The disclosure of past CFA data was perceived by the respondents to possess utility for suppliers, private shareholders, institutional shareholders, financial analysts, bankers, investment advisors and lenders (ranging from 66.5% for suppliers to 93.9% for lenders). However, only a minority found such information to be useful to either customers (35.1%), government (37.6%) or employees (48%). Although different populations were surveyed in this paper than in the Lee (1981) and McEnroe (1989) studies, the overall percentages tend to agree with their findings. Finally, the respondents thought that all user groups except government, customers and suppliers would benefit from such information. The forecasts would presumably be distributed privately to these groups, if their business transactions warranted the receipt of these statements.

SUMMARY AND CONCLUSIONS

This paper surveyed the attitudes of accounting professors, accountants (both public and private), financial analysts and investment advisors towards additional cash flow disclosures as well as their perceptions regarding certain professed attributes of CFA. The results indicate that the financial analysts and investment advisors were significantly more receptive to CFA as an integral part of the external financial reporting framework than the accounting professors and accountants. A possible explanation for this phenomena is that these latter groups have had more exposure to U.S. GAAP and, until recently, the U.S. standard-setting bodies have taken a rather conservative posture towards CFA (and still do in such areas as cash flow per share). For example, the financial analysts and investment advisors, as opposed to the other two groups, were favorably disposed to the requirement of per share cash flow from operating activities. Furthermore, the investment advisors were also in favor of cash flow forecasts. The financial analysts also demonstrated the most support for a "free cash flow" statement, while the remaining groups mainly expressed uncertainty.

The findings suggest that in the U.S., the SEC and FASB should allow more latitude in CFA reporting, perhaps permitting a presentation of operating cash flow per share. Other countries that do not prohibit this information might consider endorsing the voluntary disclosure of the statistic in order to determine if their users desire it. Lastly, since the respondents did not express an overwhelming preference for the direct versus the indirect method, the findings also support the argument for flexibility in the format of the operating cash flows section of the cash flow statement. The results should be of use to countries who are either reexamining their cash flow reporting requirements or engaged in initial deliberations involving the issuance of a cash flow promulgation.

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NOTES

1. For a detailed comparison of the cash flow reporting requirements of several countries, see Stowly and Walser-Prochazka (1992).
2. Other examples of the works of accounting scholars who have advanced the currency of CFA but which are not reviewed in this section, include Lawson (1981), and Lee (1972, 1981, 1982b).
3. Free cash flow is defined as "cash flow in excess of that required to fund all projects that have positive net present values when discounted at the relevant cost of capital." (Jensen, 1986, p. 23.) Although Turkman and Grossman (Dorfman, 1991, p. C2) described it in a less formal manner as "earnings plus depreciation minus capital spending and dividends," a slightly more proper equivalent (cash flow from operating activities less capital expenditures and dividends) is employed in this paper, and was included as the definition on the questionnaire.
4. The Securities Exchange Commission (SEC) also prohibits cash flow per share in Accounting Series Release No. 142 (ASR 142).

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Corporate Environmental Disclosures: Competitive Disclosure Hypothesis Using 1991 Annual Report Data

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Key Words: Environmental disclosures; international accounting; voluntary disclosure

Abstract: *This paper studies the scope and accuracy of environmental disclosures made in corporate annual reports. It also attempts to provide a modest test of the voluntary disclosure hypothesis in the context of environmental disclosures. A scoring procedure is used to examine the scope of environmental disclosures for 168 companies in six industries and 18 countries, and the relationship between the mean scores and environmental performance is analyzed for a subsample of companies. The results indicate (1) significant variations in environmental disclosures and hence no clear support for the voluntary disclosure hypothesis, and (2) no apparent association between disclosure and environmental performance.*

Environmental performance is among the most pressing issues facing corporations worldwide. The Institute of Management Accountants, the foremost professional management accounting association in the United States, has identified the recognition and disclosure of environmental costs as a top priority on its list of important emerging management accounting information and cost recognition issues (*Research Topic Guide*, 1991-1992). Societal demands, heightened by the news of major oil spills and toxic dump sites around the world, together with new extensive environmental legislation in the United States and elsewhere have forced companies to undertake and actively participate in extensive environmental programs.

In the United States, the Financial Accounting Standards Board is considering whether financial reporting for environmental liabilities should be placed on its agenda. The driving force behind this is the sheer magnitude of corporate environmental liabilities, estimated between \$500 and \$750 billion (Lavelle, 1992). By way of contrast, the total liability for postemployment benefits other than pensions (OPEB) has been estimated at \$331 billion (Thompson, 1991, Zuber and Berry, 1992). Meantime, the Securities and Exchange Commission (SEC) has mandated special disclosure requirements to ensure that securities purchasers and sellers have access to vital information concerning a company's environ-

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mental liabilities. SEC regulation S-K, revised in 1986, requires the following specific disclosures. Item 101 requires companies to disclose in 10-K to reports the effects compliance with federal, state, and local environmental laws may have on its capital expenditures, earnings, and competitive position. Item 101 also requires companies to reveal the estimated capital expenditures for environmental control facilities for the current fiscal year, the following year, and such other years as may be necessary. Item 103 requires disclosure of any pending or contemplated administrative or judicial proceedings by governmental authorities arising under federal, state or local environmental statutes. Item 303 requires the Management Discussion and Analysis (MD&A) of Form 10-K to include discussion of any known demands, commitments, events, or uncertainties reasonably likely to result in a material change in the reporting company's liquidity or capital resources.

The SEC underscored its environmental concern by issuing SEC Release 6835 in 1989 and Staff Accounting Bulletin 92 in 1993. Both these documents require management to disclose any environmental problem of known potential significance unless it is able to conclude objectively that the problem is not reasonably likely to occur or that its consequences would not be material if it did. As noted by Walsh (1991), the new SEC disclosure criteria are likely to lead to greater corporate environmental disclosures since they require asserting a double negative rather than establishing the probability of an event occurring and estimating its financial consequences as required under Statement of Financial Accounting Standard (SFAS) Number 5, *Accounting for Contingent Liabilities*, and SFAS Interpretation 14. These two statements together require that: (1) a liability be accrued and expense recognized if a contingency is *probable* and the amount of loss can be *reasonably* estimated; (2) if all estimates in a range are equally probable, the minimum loss should be recognized; and (3) if a liability is not accrued because it is not probable or estimable, the nature of the liability should be disclosed in the notes to the financial statements. But Rubinstein (1990) notes, the scope and quality of disclosures can vary considerably between companies, particularly with respect to providing financial estimates of loss or range of losses. As a result, there is little consistency in the way companies report their environmental disclosures. To rectify this and other oversight problems, SEC has found it necessary to seek an information-exchange agreement with the Environmental Protection Agency (EPA) so it can identify inadequate or inaccurate corporate disclosures. What concerns businesses most, however, is the issue of potential liabilities under the strict joint and several liability imposed by the "Superfund" legislation.[1]

Under the broad sweep of the concept of joint and several liability, which is permitted but not required under Section 9607 of the "Superfund" legislation, all parties involved in a hazardous waste site including current and past owners, operators or transporters when hazardous substances were generated or disposed could be held liable for remediation costs, as well as for damages to natural resources, and health assessment and study costs.

In Europe, environmental disclosure requirements vary, but this is changing rapidly. More than 80 EC environmental directives are being developed which will result in increasing the cost of domestic waste disposal significantly (ICAEW, 1992). Of particular interest is the voluntary eco-audit proposal, which would require "a systematic, documented, periodic and objective evaluation of the performance of the organization, management system and equipment designed to protect the environment... [to] facilitate management control...[and to] facilitate compliance with company policies, including observance of the existing regulatory requirements" (ICAEW, 1992, p. 93). Under this pro-

posal, EC member countries have agreed to set up a register of companies carrying out an eco-audit and appoint an independent body to accredit the eco-auditors. But more recently, the EC Commission has begun to explore ways and means to decide: (1) what information about a firm's environmental policy and activities should be disclosed in its annual reports; (2) how an enterprise should account for contingent environmental liabilities; and (3) how expenditures on environmental programs should be defined and disclosed. The Commission has also moved to direct all member states to ensure freedom of access to information on the environment held by public authorities.

National and EC-wide disclosure requirements notwithstanding, European countries in general have had a long tradition of reporting on social and, recently, on environmental concerns. German companies for instance have often been cited for their exemplary environmental reporting practices (Federation des Experts Comptables, 1993). Austrian companies are following the German initiatives in making environmental disclosures. Increased competitive and social pressures in recent years seem to have contributed to broadening the level and scope of environmental reporting among many European companies (Roberts, 1991, 1992). However, no European accounting standard-setting body has as yet addressed the issue systematically, although the professional accounting bodies in Belgium, Denmark, and Germany have set up working committees to study the problem. Consequently, there is no consensus on the type or extent of environmental information disclosures.[2]

Previous studies (Buzby and Falk, 1979; Belkaoui, 1980; William, 1980; Ingram and Frazier, 1980; Wiseman, 1982; Freedman and Wasley 1983, 1990; Owen, 1992; Roberts, 1991, 1992; Freedman and Stagliano, 1992; UN, 1992; Mastrandonas and Strife, 1992; Barth and McNichols, 1994) have considered various important aspects of environmental and other social responsibility disclosures, but few have addressed the content and accuracy of corporate environmental disclosures, and none has extended the analysis to a sample of international firms. Most studies have focused on the usefulness of social and environmental disclosures to investors and other stakeholders, but with mixed results.

Wiseman (1982) studied the environmental disclosure and performance of 26 U.S. companies in three industries (steel, oil, and pulp and paper). The present study replicates parts of Wiseman's methodology, but extends the research to a much larger sample of international firms encompassing six environmentally sensitive industries in 18 countries. It uses the UN data base of 222 firms as a starting point to gather disclosure information for 1991, and analyzes the data by industry, by country, and by company. In the process, it challenges the voluntary disclosure hypothesis, outlined below, and, by implication, one of the conclusions of prior studies on the desirability of disclosing more environmental information. It also attempts to evaluate the accuracy of environmental disclosures for a subset of 26 multinational firms for which independent external sources of information were available.

The theoretical antecedents of the voluntary disclosure hypothesis go back to the seminal work of Grossman (1981) and Milgrom (1981). They advance an adverse selection argument for full disclosure of valuation-relevant information by firms. If potential investors know the type but not the content of information withheld by a firm, then, in the absence of full disclosure, investors rationally discount the value of the firm to the worst case. This costs the firm, and gives added incentive to disclose information that is better than the worst case. In a competitive environment, firms would tend to compete with each other to

disclose information to avoid suffering the consequences associated with withholding unfavorable information. Given the differences in mandated and voluntary environmental disclosure practices around the world, it might be reasonable to expect that competitive market forces would tend to drive the level of environmental disclosures up to the standard set by rival firms with the highest mandated or voluntary disclosure (Meek and Gray, 1989). Actually, differences in mandated disclosure requirements provide a rich data set to study the voluntary disclosure hypothesis. This is because competitive forces are then supposed to drive firms from countries with less stringent requirements toward those with more stringent requirements. This sort of outcome might be particularly relevant in the context of environmental disclosures because such disclosures, whether favorable or unfavorable, are less likely to have net adverse consequences when both financial and product markets are considered. If the disclosure is favorable, it is likely to increase the firm's valuation in the financial markets and enhance its status in the eyes of consumers without necessarily leaking proprietary trade information. If the disclosure is unfavorable, the downgrading in the financial markets may be at least partially compensated by improving the status of the firm in the eyes of consumers for openness.

The voluntary disclosure hypothesis, in its original form, hinges on three assumptions (Darrough, 1993). First, there should be common knowledge that firms have private information. Second, when firms disclose, they do so truthfully. And finally, firms are concerned with financial market valuation. The first assumption is almost certainly applicable to our sample of firms because it is public knowledge that they are in environmentally sensitive industries and hence should be able to make environmental disclosures. The second assumption is in part the subject of analysis when we correlate disclosure with accuracy for a subsample of firms. Because environmental disclosures are not always subject to generally accepted standards, the information that gets into the public domain may tend to be largely self-serving. As a recent issue of the *Financial Times* (April 15, 1992) put it, "[environmental reporting] exhibits the glossy hand of the public relations experts." The third assumption may be key in explaining the observed variations between firms in different countries.

The remainder of this paper is organized as follows. First, the research design is described in greater detail, followed by the results of the study, a more detailed discussion, and additional evidence. The paper concludes with a summary of the key findings and suggestions for further research. Appendix A lists the environmental disclosure items and the scoring system used to construct the disclosure score. Appendix B displays graphically some of the statistical results of the study.

RESEARCH DESIGN

Corporate environmental disclosure can take several forms and the annual report to stockholders is a very important form of periodic corporate disclosure. This research is based on stockholder annual reports of 168 major international companies contained in the sample used by the United Nations Centre on Transnational Corporations in its 1991 survey. All the 222 companies in the UN sample were contacted. Of these, 168 firms (75.7%) covering six industries in 18 countries responded by sending their annual reports and, in some cases, the extra environmental disclosures they routinely supply to their stockhold-

ers.[3] As noted earlier, the six industries covered in the study are recognized as being among those with the greatest environmental problems (UN, 1992, p. 4). Companies that did not respond to the first request received a second request. But companies from three countries (Luxembourg, South Korea, and India) did not respond and were, therefore, excluded from the study. The data were checked for the existence of non-response bias by comparing the average scores and standard deviations of the original batch of responses with those of the late batch.[4] The highest response rate was from firms in the chemical industry (96%), the lowest from firms in the metals industry (63%). For countries with three or more companies in the sample, the highest response rate was from firms in the United States (99%) and the lowest from Japan (41%). Interestingly, the industry response rate and the level of environmental disclosure as measured by our disclosure score (described below) did not correlate. But the country response rate and the level of country disclosure did.

Annual reports are widely recognized as the principal means of corporate communication of activities and intentions to shareholders and are the primary source of environmental reporting by corporations (Wiseman, 1982, p. 55). A scoring procedure similar to the ones used by Cerf (1961), Singhvi and Desai (1971), Buzby (1974), and Wiseman (1982) was constructed to measure the information contained in the disclosures and to provide a systematic numerical basis for making comparisons between companies, countries, and industries. Items of information included in the score substantially followed Wiseman (1982). This covers 18 items grouped in four categories: accounting and financial factors, environmental litigation, environmental pollution abatement, and other environmentally related accounting measurements. See Appendix A for a detailed list of all the 18 items. A scoring system similar to Wiseman's was prepared for each company. This system gives values between 0 and 3. A 0 is given if the item is not present in the annual report, 1 if the item is disclosed in general terms only, 2 if it includes company specific information in non-quantitative terms, and 3 if the item is disclosed in monetary or quantitative measures. For purposes of the analysis, we considered the averages of these scores within each category.

To ensure accuracy and consistency, all the companies were first scored by one of the authors and any areas of uncertainty were discussed and resolved by consensus. A random sample of 30 companies was drawn and thoroughly reviewed by an independent research assistant with expertise in environmental matters, and then the entire set was further reviewed by another author. The following two hypotheses were tested:

H1: *There is no significant difference in mean disclosure scores by industry.*

H2: *There is no significant difference in mean scores by country.*

Exploratory analysis of the data revealed country and industry differences, as well as differences between U.S. based companies and non-U.S. based companies. The results will be discussed in detail in the next section. The findings are then related to the voluntary disclosure hypothesis as outlined above.

For a subsample of 26 companies[5] that are monitored and ranked by the Council on Economic Priorities (CEP),[6] we tested for association between the CEP environmental performance and rankings based on the environmental disclosure score developed in this

study. The CEP rankings used were generated from the data on toxic releases and the Superfund Potentially Responsible Party (PRP).[7]

RESULTS

Appendix B presents a global picture of the distribution of disclosure scores by country and by industry. The top frame shows a boxplot for each country.[8] Clearly there are many more companies from the U.S. than from any other single country and they present the widest variability in scores. Japan is the country with the lowest levels of disclosure; Canada has the highest. Chile, Denmark, New Zealand, and Norway have only one company each. The bottom frame has one boxplot for each industry: Forestry shows the highest level of disclosure and Motor the lowest, while the Chemical industry presents the widest variability.

The differences in average disclosure scores are significant when tested using analysis of variance (Table 1 and Table 2). The hypothesis **H1** that all industries have the same average disclosure score and **H2** that all countries have the same average disclosure score are both rejected. Taking confidence intervals around each mean disclosure score we can say that the forestry mean level of disclosure is certainly different from motors and pharmaceuticals; Japan's mean level of disclosure is definitely different from 10 other countries (Belgium, Canada, Finland, France, Germany, New Zealand, Sweden, Switzerland, United Kingdom, and U.S.) and Canada's average disclosure levels are significantly higher than 5 other countries (France, Germany, Japan, U.K., and U.S.). For other countries and industries, the differences are less clear because of overlapping intervals.

Joint analysis of country and industry differences can only be done using regression analysis. The regression analysis showed again significant differences between Canada and France, Germany, Japan, and U.K., when taking into account differences between industries. It also showed significant differences between forestry versus the motor and pharmaceutical industries, when taking into account differences between countries. We did not find evidence of country/industry interaction, although no formal test could be carried out because that would require at least two companies per country per industry. Table 3 gives the averages by country by industry, highlighting the countries with higher sample sizes.

If we consider only countries with at least five firms in the sample, the results are essentially the same. Canada is on top with an average score of 1.80, while Japan is at the bottom with an average overall score of 0.46. Among the five countries with the largest number of firms in the sample, (U.S., Germany, Japan, France, and U.K.), differences between companies in chemical and forestry were generally significant, but not in other countries.

A separate analysis of the four-item groups in Appendix A revealed that U.S. companies have a much higher level of disclosure than any other country with respect to environmental litigation. This may be attributable to the litigious environment in the United States and the relative lack of lawsuits in other countries.

The analysis of a subsample of 26 companies to compare environmental disclosures against environmental performance showed no relationship. The disclosure score rankings were correlated with CEP rankings by toxic release, by sites for which a firm had been identified by the Environmental Protection Agency as Potentially Responsible Party (PRP), and by the average of the last two rankings. Table 4 presents the results of test using

Table 1. Analysis of Variance on Average Disclosure By Country

A. SOURCE	*DF*	*SS*	*MS*	*F*	*p-value*
COUNTRY	17	18.108	1.065	3.75	< 0.001
ERROR	150	42.640	0.284		
TOTAL	167	60.747			

B. COUNTRY	*N*	*MEAN*	*ST. DEV.*	*INDIVIDUAL 95% CONFIDENCE INTERVALS FOR THE MEAN BASED ON THE POOLED ST. DEVIATION*
				--------+----------+----------+-------
Austria	2	0.98	0.1202	(--------*-------)
Belgium	4	1.25	0.2819	(------*-----)
Canada	7	1.80	0.4018	(----*---)
Chile	1	1.22	0.0000	(------------*------------)
Denmark	1	1.17	0.0000	(---------------*-----------)
Finland	6	1.39	0.3585	(----*-----)
France	11	1.02	0.6345	(---*---)
Germany	22	1.15	0.5724	(-*--)
Italy	3	1.07	0.5773	(------*--------)
Japan	20	0.46	0.3166	(--*--)
Netherlands	3	1.06	0.7865	(------*-------)
New Zealand	1	1.89	0.0000	(------------*------------)
Norway	1	1.50	0.0000	(------------*------------)
Spain	2	1.09	0.1202	(---------*--------)
Sweden	8	1.31	0.4963	(---*----)
Switzerland	3	1.41	0.6403	(-------*------)
U.K.	9	0.99	0.5159	(---*----)
U.S.A.	64	1.39	0.5825	(*-)
				--------+----------+----------+-------
				0.80 1.60 2.40

POOLED ST. DEV. = 0.5332

N = Number of Companies per Country

Table 2. Analysis of Variance on Average Disclosure By Industry

A. SOURCE	*DF*	*SS*	*MS*	*F*	*p-value*
INDUSTRY	5	11.271	2.254	7.38	< 0.001
ERROR	162	49.477	0.305		
TOTAL	167	60.747			

B. INDUSTRY	*N*	*MEAN*	*ST. DEV.*	*INDIVIDUAL 95% CONFIDENCE INTERVALS FOR THE MEAN BASED ON THE POOLED ST. DEVIATION*
				-----+---------+---------+---------+-
Chemical	46	1.25	0.6347	(----*---)
Forestry	25	1.54	0.5571	(-----*-----)
Metallurgy	23	1.16	0.5837	(-----*------)
Motor	27	0.76	0.4091	(-----*-----)
Petrochemical	27	1.44	0.5603	(-----*-----)
Pharmaceutical	20	0.94	0.4526	(------*------)

Table 3. Average Score Matrix (min. 0 - max. 3)

	No. per Country	*Chemicals*	*Forestry*	*Metal*	*Motor*	*Petroleum*	*Pharma.*	*Country Avg.*
No. per Industry		46	25	23	27	27	20	
Austria	2	–	–	–	0.89	1.06	–	0.98
Belgium	4	1.09	–	1.67	–	1.17	–	1.25
Canada	7	–	1.81	1.78	–	1.83	–	1.80
Chile	1	–	–	–	–	1.22	–	1.22
Denmark	1	–	–	–	–	–	1.17	1.17
Finland	6	1.11	1.57	0.89	–	1.61	–	1.39
France	11	0.83	–	1.02	0.87	1.55	0.78	1.02
Germany	22	1.36	–	1.22	0.60	–	1.21	1.15
Italy	3	1.17	–	–	0.89	–	–	1.07
Japan	20	0.44	0.47	0.56	0.45	0.44	–	0.46
Netherlands	3	1.50	–	–	–	–	0.17	1.06
New Zealand	1	–	1.89	–	–	–	–	1.89
Norway	1	1.50	–	–	–	–	–	1.50
Spain	2	–	–	–	1.17	1.00	–	1.09
Sweden	8	0.56	1.67	–	0.89	1.50	–	1.31
Switzerland	3	1.78	–	0.67	–	–	–	1.41
United Kingdom	9	1.31	–	0.91	–	0.83	0.94	0.99
U.S.A.	64	1.69	1.55	1.64	0.90	1.63	0.93	1.39
Industry Average	168	1.25	1.54	1.61	0.76	1.44	0.94	1.19

Notes: Scores range from 0 to 3—with higher scores indicating higher degree of environmental disclosure. For comparison purposes, the countries with the higher sample sizes have been shaded.

Spearman Rank Correlation. The analysis confirms Wiseman's conclusion (1982) of no apparent association between companies' actual performance and environmental disclosure.

ANALYSIS AND FURTHER EVIDENCE

The evidence presented in this study suggests that major firms in environmentally sensitive industries worldwide are not competing to match one another in providing comparable environmental disclosures in their annual reports. There is, therefore, what might be described as an environmental disclosure gap among major international firms in environmentally sensitive industries.[9] Although contrary to what one might expect under the voluntary disclosure hypothesis, this outcome is not surprising. As indicated earlier, a key assumption of the voluntary disclosure hypothesis is the concern of companies with financial market valuation. If some firms seldom use the financial market to obtain capital, they would tend to be less concerned with the effects of information disclosure on financial markets, and perhaps more with how disclosure might affect the non-financial markets including their market share and competitive environment in general (Feltham and Xie, 1992). This may be the case with Japan's famous six Keiretsu groups (Mitsui, Mitsubishi, Sumitomo, Fuyo, Sanwa, and Dai-Ichi Kangyo). At the center of these company groupings is a major bank of the same name, on which the member firms rely heavily for their financing needs. These major structural differences may in part explain why Japanese companies have low disclosure scores while U.S. companies have high disclosure scores.

The voluntary disclosure hypothesis also assumes that if companies disclose information, they do so truthfully. While we have no evidence to suggest that firms in our sample are untruthful about their environmental disclosures, we find a general lack of correlation between their environmental disclosure score and their environmental performance. This may be corroborated from other sources and from further analysis of the firms included in our subsample of 26 firms. A recent *Fortune* magazine study (Rice, 1993) of the environmental performance of America's largest manufacturers includes American Cyanamid, International Paper, Monsanto, Du Pont, USX, Sun, Johnson & Johnson, and Dow. These firms are also covered in our subsample. The Fortune study places the first five (American Cyanamid, International Paper, Monsanto, Du Pont, and USX) in the category of "The 10 Laggards", the second two (Sun and Johnson & Johnson) in the category of "The 10 Most Improved", and the last one (Dow) in the category of "The 10 Leaders". All but one of the first five had above-average disclosure scores in our study. Of the second two, Johnson & Johnson had a below-average disclosure score. Only Dow had an above-average disclosure score and was also among "The 10 Leaders". This evidence, limited and unsystematic as it may be, nevertheless lends support to the finding of the lack of correlation between environmental disclosure and performance.

Probing further into the performance of companies in our subsample also provides additional support. For the companies in our subsample other than those included in the *Fortune* study, we checked the annual reports for disclosure of involvement as a Potentially Responsible Party (PRP). With the exception of three, none of the other companies in the subsample provided any such disclosure detail, even though they were in fact named as a Potentially Responsible Party in a number of toxic sites. A substantial majority of these

Table 4. Spearman Rank Correlation Tests: Test Data vs. CEP Report Data

A.	*Toxic Releases per $1,000 Sales Rank (CEP* 1988)*	*# of PRP Sites Rank (CEP 1991)*	*Annual Report Survey Score Rank (1991)*	*Average Toxic/PRP Rank (CEP 1988, 1991)*
American Cyanamid	26	15	11	24
Ashland Oil	3	23	17	15
BASF	24	12.5	8	22
Boise Cascade	16	6	25.5	9
Chevron	8	25	2	20
Chrysler	4	12.5	22	2
Dow Chemical	11	18.5	15	19
Dupont	23	26	9.5	25.5
Exxon	1	20.5	4	7
Ford	2	15	16	3.5
General Motors	5.5	18.5	24	13.5
Georgia Pacific	12	10	18.5	9
ICI	20	8	13	17.5
International Paper	18	4.5	4	11.5
James River	19	3	4	9
KimberlyClark	7	4.5	21	1
Monsanto	25	24	1	25.5
Phillips Petroleum	14	10	14	13.5
Sandoz	17	1.5	12	5
Scott Paper	10	7	25.5	3.5
Shell	22	17	18.5	23
Stone Container	21	1.5	9.5	11.5
Texaco	5.5	22	6.5	16
Union Carbide	15	20.5	6.5	21
USX	13	15	23	17.5
Weyerhaeuser	9	10	20	6
Mean	13.5	13.5	13.5	13.5
Sum	351	351	351	351
Sum^2	123201	123201	123201	123201

B.		
Toxic Releases vs. Annual Report Score		
Spearman's Correlation	–0.32203	
t-statistic	–1.66641	
99% *t*-test value	–2.797	Accept
95% *t*-test value	–2.064	Accept
90% *t*-test value	–1.711	Accept
PRP Sites vs. Annual Report Scores		
Spearman's Correlation	–0.26763	
t-statistic	–1.36074	
99% *t*-test value	–2.797	Accept
95% *t*-test value	–2.064	Accept
90% *t*-test value	–1.711	Accept
Avg. Toxic/PRP vs. Annual Report Score		
Spearman's Correlation	–0.43631	
t-statistic	–2.37551	
99% *t*-test value	–2.797	Accept
95% *t*-test value	–2.064	Accept
90% *t*-test value	–1.711	Accept

Notes: Toxic and PRP Rankings rank measurements from lowest to highest while Annual Report rankings give a ranking of 1 to the highest score. This enables us to compare preceived goods (low Toxic/PRP level and a high level of environmental disclosures).

Ties: According to standard Spearman conventions ties are given the average rank if given sequentially (i.e. (3 + 4) / 2 = 3.5)

* CEP = Council for Economic Priorities

companies (80%) had above-average disclosure scores. This conclusion corroborates the Price Waterhouse Survey (1992) that a majority of companies have known environmental exposures not yet recorded in their financial statements.

CONCLUSIONS

The main findings of the study indicate: (1) significant variations among companies in different industries and countries in how much information on their environmental performance they disclose in their annual reports to their shareholders, and (2) what they disclose does not seem to correlate with their environmental performance. Among industries, motor vehicles discloses the least, and forestry products discloses the most. Among countries, Japan seems to rank at the bottom by disclosing the least information, while Canada ranks on top by disclosing the most. In general, it might be fair to say that not much has changed since Wiseman's study was published over a decade ago. The study also indicates that while the voluntary disclosure hypothesis may work in some industries and countries, it does not seem to be fully at work with respect to environmental disclosures by major environmentally sensitive industries at the global level.

The paper also raises several research questions that need to be investigated. These questions include: (1) the relationship between reliance on financial markets and environmental disclosures; (2) the impact of environmental disclosures on firms' nonfinancial markets; (3) market valuation of environmental disclosures; (4) accounting for and auditing of environmental disclosures; and (5) events in the regulatory process that provide information to the market.

Acknowledgement: The authors acknowledge the valuable comments of Professor Patricia Fairfield of the Georgetown School of Business on an earlier draft of this paper, and comments by the Editor and two anonymous reviewers. They are also grateful for the assistance of Sandeep Vishnu for checking the accuracy of the ratings assigned to companies in the study. The summer financial support provided by the Georgetown School of Business is gratefully acknowledged. The authors alone are responsible for the views expressed in the study and for any remaining errors.

APPENDIX A

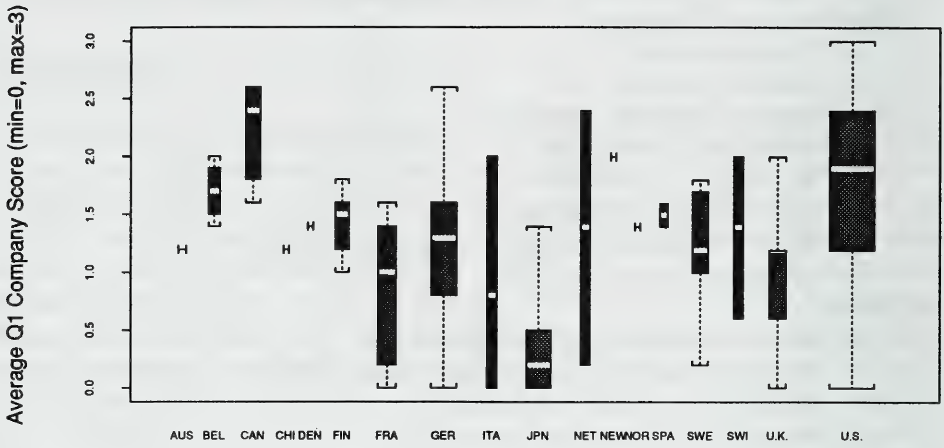
Disclosure Score Information Items

1. **Accounting and Financial Factors**
   a. Past and current expenditures for environmental control equipment and facilities
   b. Past and current operating costs of environmental control equipment and facilities
   c. Future estimates of expenditure for environmental control equipment and facilities

   d. Future operating costs of environmental control equipment and facilities
   e. Financing for environmental control equipment or facilities.
2. **Environmental Litigation**
   a. Present litigation
   b. Potential litigation
3. **Environmental Pollution Abatement**
   a. Air emission information
   b. Water discharge information
   c. Solid waste disposal information
   d. Control, installation, facilities or processes described
   e. Compliance status of facilities
4. **Other**
   a. Discussion of regulations and requirements
   b. Environmental policies or company concerns for the environment
   c. Conservation of natural resources
   d. Awards for environmental protection
   e. Recycling
   f. Departments or offices for pollution control
5. **Scoring**
   0 if the item is not present in disclosure
   1 if the item is disclosed in general terms only
   2 if the item is disclosed with company specific information in non quantitative terms
   3 if the item is disclosed in monetary or quantitative measures

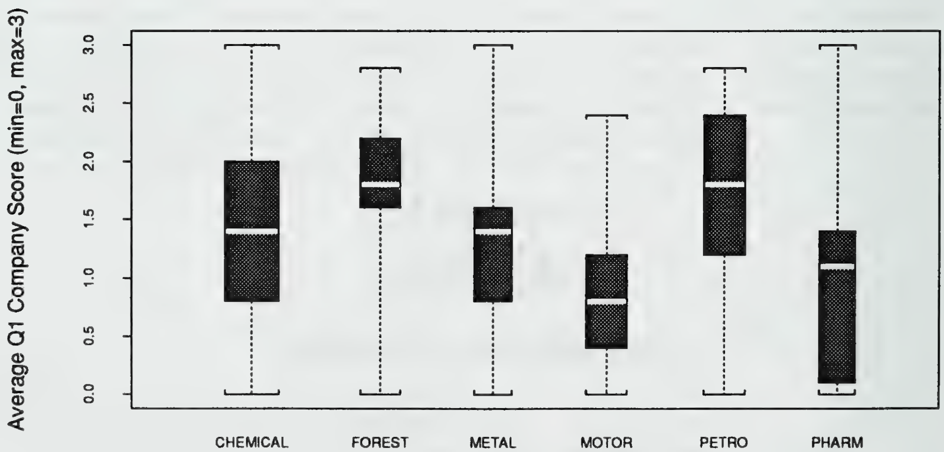
APPENDIX B

Figures to follow



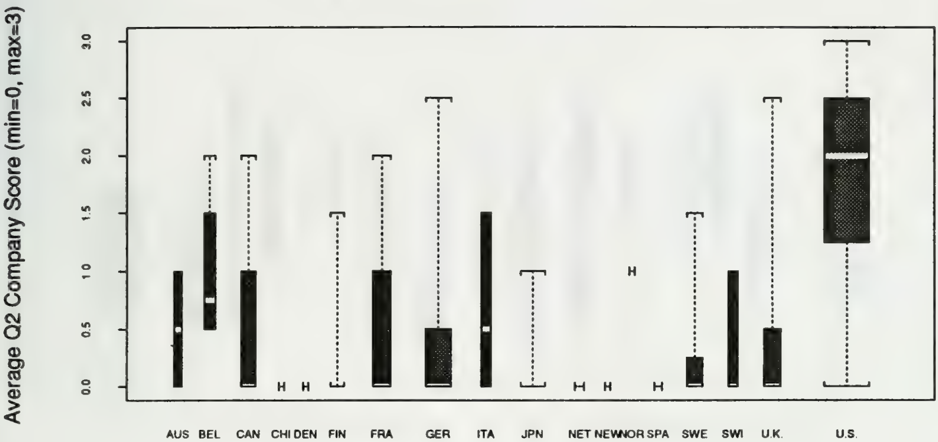
Notes: The white line represents the median value by country; all values fall within the brackets
The box width is proportional to the square root of the number of companies per country

Figure 1a. Accounting and Finance Factors, Q1 Score by Country
(Each box contains the middle 50% of the observations)



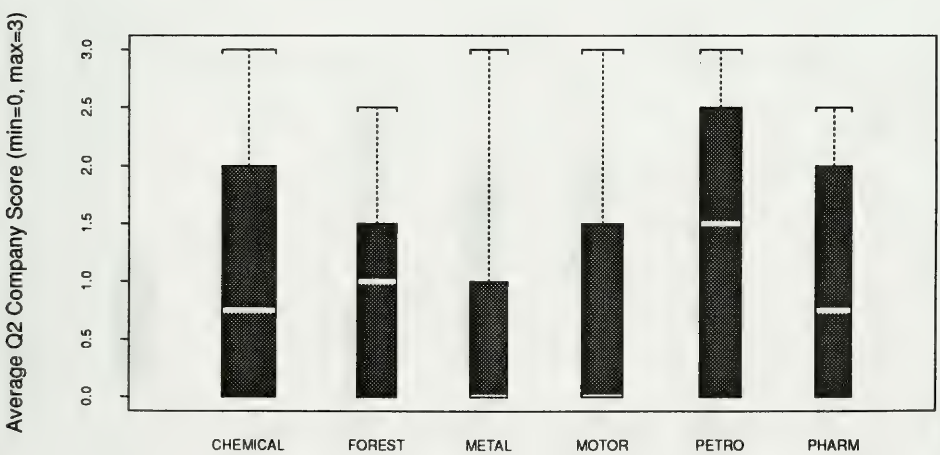
Notes: The white line represents the median value by industry; all values fall within the brackets
The box width is proportional to the square root of the number of companies per industry

Figure 1b. Accounting and Finance Factors, Q1 Score by Industry
(Each box contains the middle 50% of the observations)



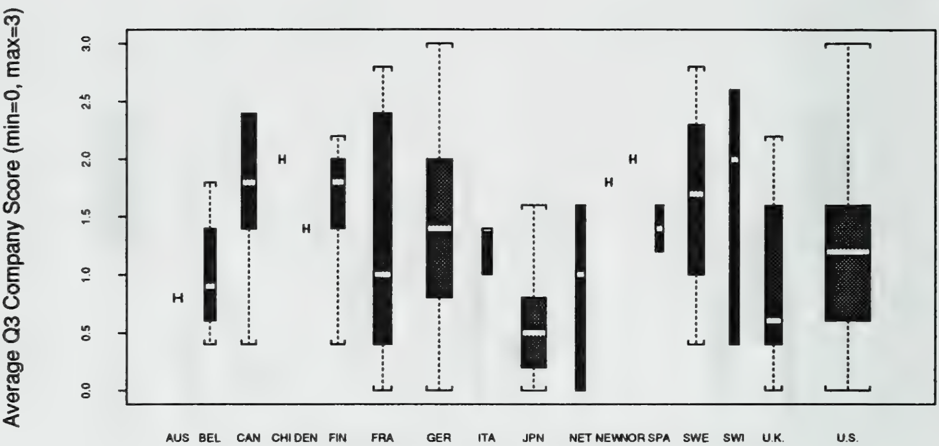
Notes: The white line represents the median value by country; all values fall within the brackets box width is proportional to the square root of the number of companies per country

Figure 2a. Environmental Litigation, Q2 Score by Country (Each box contains the middle 50% of the observations)



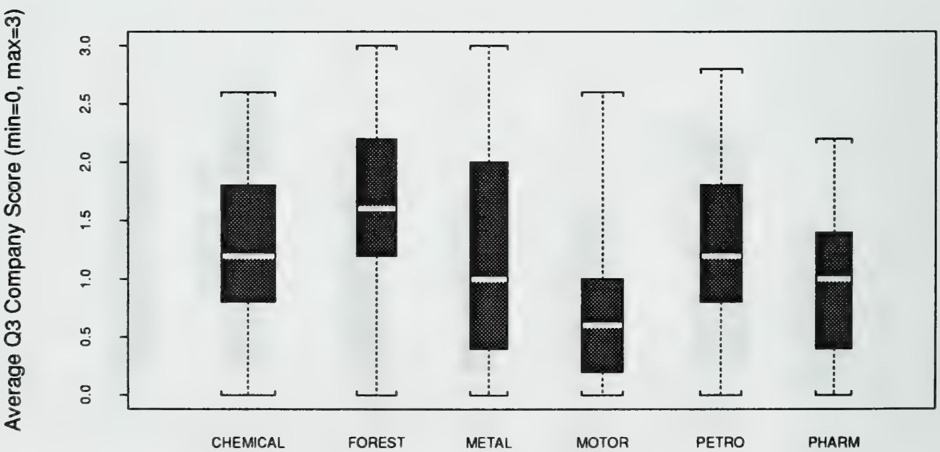
Notes: The white line represents the median value by industry; all values fall within the brackets The box width is proportional to the square root of the number of companies per industry

Figure 2b. Environmental Litigation, Q2 Score by Industry (Each box contains the middle 50% of the observations)



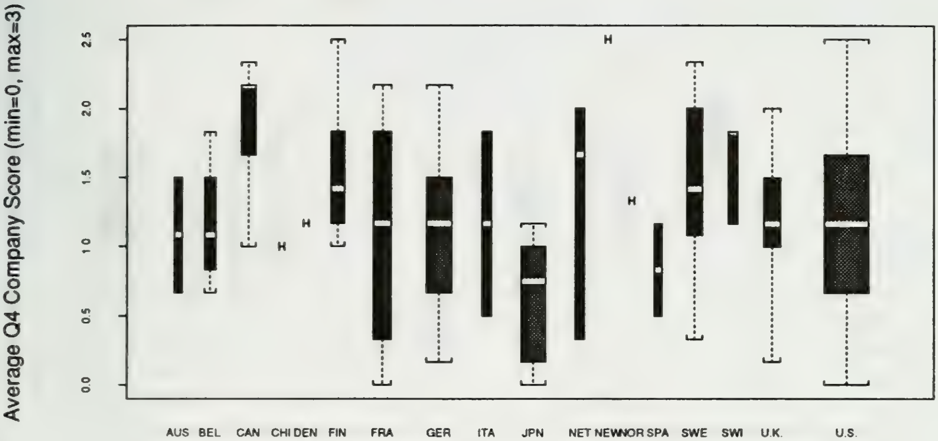
Notes: The white line represents the median value by country; all values fall within the brackets
The box width is proportional to the square root of the number of companies per country

Figure 3a. Environmental Pollution Abatement, Q3 Score by Country
(Each box contains the middle 50% of the observations)



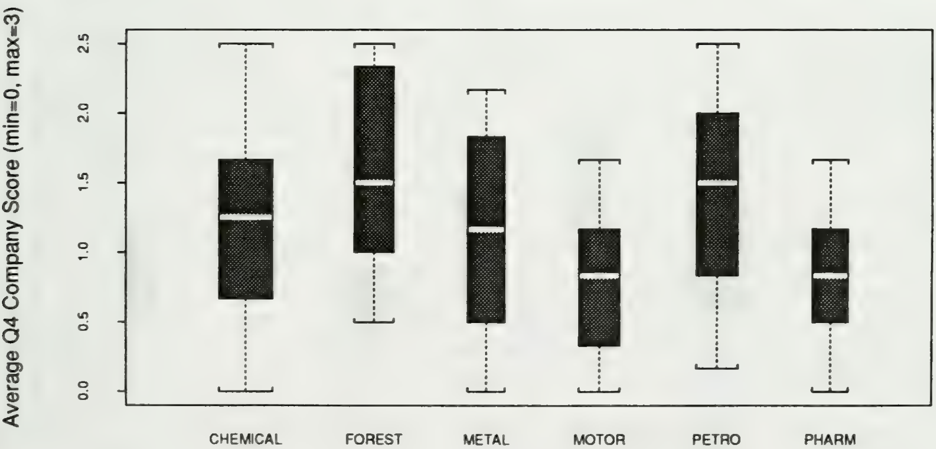
Notes: The white line represents the median value by industry; all values fall within the brackets
The box width is proportional to the square root of the number of companies per industry

Figure 3b. Environmental Pollution Abatement, Q3 Score by Industry
(Each box contains the middle 50% of the observations)



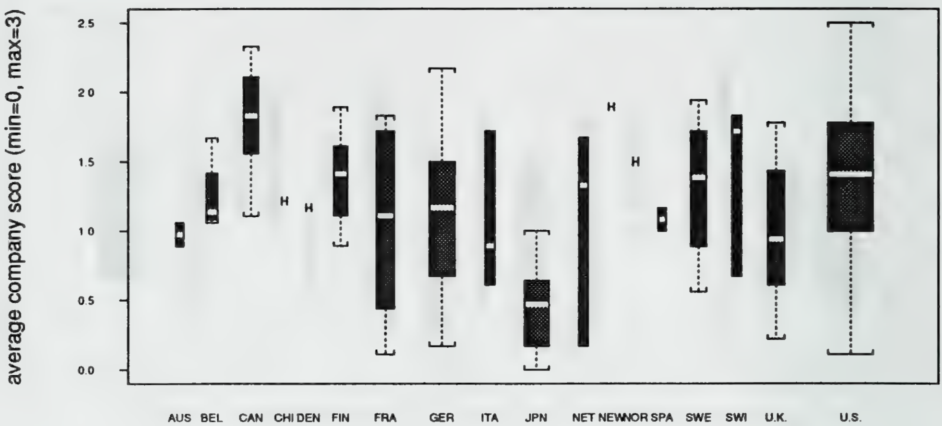
Notes: The white line represents the median value by country; all values fall within the brackets
The box width is proportional to the square root of the number of companies per country

Figure 4a. Other Disclosures, Q4 Score by Country
(Each box contains the middle 50% of the observations)



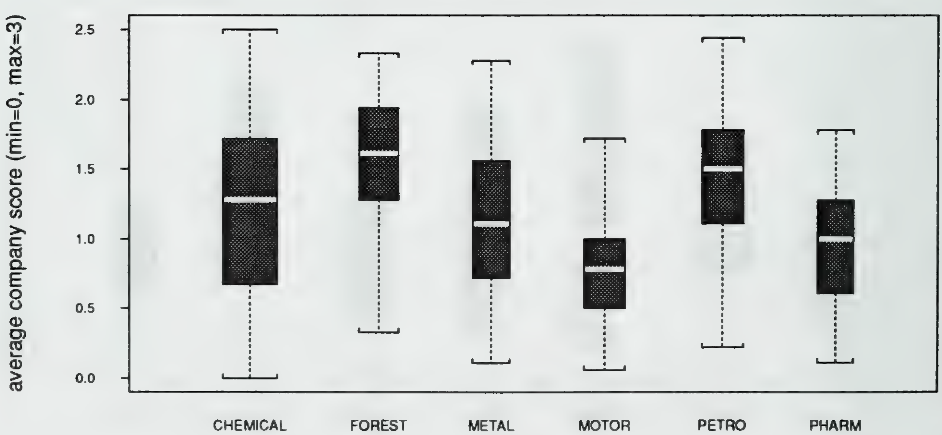
Notes: The white line represents the median value by industry; all values fall within the brackets
The box width is proportional to the square root of the number of companies per industry

Figure 4b. Other Disclosures, Q4 Score by Industry
(Each box contains the middle 50% of the observations)



Notes: The white line represents the median value by country; all values fall within the brackets
The box width is proportional to the square root of the number of companies per country

Figure 5a. Average for all Questions by Country
(Each box contains the middle 50% of the observations)



Notes: The white line represents the median value by industry; all values fall within the brackets
The box width is proportional to the square root of the number of companies per industry

Figure 5b. Average for all Questions by Industry
(Each box contains the middle 50% of the observations)

NOTES

1. The Superfund legislation was enacted by Congress in 1980 as the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLA and subsequent amendments have given the Environmental Protection Agency (EPA) oversight authority on the cleanup of abandoned or uncontrolled hazardous waste sites.
2. According to *The Economist* (September 4, 1993), there are two broad models of disclosures. One, the Anglo-American model, lists year-to-year changes in pollutants to air, water and soil. The other, the Teutonic model, attempts to capture what companies take in and what they produce, sort of an input-output model, to show the net impact of company operations on the environment. For details, see "A Green Account," *The Economist*, September 4-10, 1993, p. 69.
3. The original UN sample included all the 315 companies in the six major global industries (chemicals, forestry and related products, metals, motors, petroleum and petrochemicals, and pharmaceuticals) listed in either the Fortune Global 500 of July 1990 or the Billion Dollar Club, a UN Centre on Transnational Corporations database. Of the 315 companies in the initial sample, 222 were finally included in the UN survey. The present study contacted all the 222 companies on the UN list, but only 168 (nearly 76%) responded. A consequence of this approach to collecting data is that while the companies included in the study may adequately encompass all the six industries, there is no built-in balance in the distribution of companies by country. Because of this lack of balance, the conclusions of this study may be more applicable to industries rather than to countries. To the extent that this is true, our results may not be generalizable beyond the firms actually in the sample. However, these firms are undoubtedly among the largest and best known in the world. The UN Billion Dollar Club includes the world's largest industrial corporations with annual sales of more than one billion dollars. These corporations account for more than one fifth of value added in the production of goods in both developed and developing market economies. More than three quarters of companies included in the UN sample are domiciled in four countries: the United States, Japan, the United Kingdom, and Germany.
4. The average score of the late batch of responders (14 companies) was actually slightly higher than the average score of the early batch (154 companies)—1.25 vs. 1.19, while the standard deviation was slightly lower—0.516 vs. 0.608.
5. This subsample included the following: American Cyanamid, Ashland Oil, BASF, Boise Cascade, Chevron, Chrysler, Dow, DuPont, Exxon, Ford, General Motors, Georgia-Pacific, ICI, International Paper, James River, Kimberley Clark, Monsanto, Phillips Petroleum, Royal Dutch Shell, Sandoz, Scott Paper, Stone Container, Texaco, Union Carbide, USX, and Weyerhaeuser.
6. The Council on Economic Priorities (CEP) is a New York-based non-profit, public interest research organization with a nation-wide membership. For nearly a quarter of a century, CEP has conducted research on corporations' impact on the environment.
7. As part of the 1986 amendments to the Superfund legislation, the EPA created the Toxic Release Inventory which documents the type and amount of toxins released by manufacturing facilities. Total releases per $1,000 of sales were reported by CEP and used in this study. Also under the Superfund legislation, the EPA identifies Potentially Responsible Parties (PRPs) by hazardous waste sites. These parties may be partially or wholly liable for environmental clean-up costs. The EPA publishes information on PRPs on the Site Enforcement Tracing System (SETS) database. If a site is deemed a serious hazard, it is placed on the National Priority List (NPL) for further investigation and follow-up.
8. A boxplot is a graphical representation of the distribution of the data. It is drawn using five numerical summaries: the minimum, the maximum, the quartiles (Q_1 = 25th percentile, Q_3 = 75th percentile) and the median (50th percentile). The edges of the box are the quartiles thus each box indicates the location of the middle 50% of the observations of each country. The line that separates the box in two parts is the median. The width of the box is proportional to the square root of the number of companies per country. Displaying one boxplot for each country, side by side, allows a quick global comparison of the level and the variability of disclosure in different countries.

9. A question may arise as to whether it is appropriate to expect environmental disclosures in cases where a firm has little or no private information, in part because there are no major problems to report. In general, this seems like a reasonable scenario. But in light of the six environmentally sensitive industries we have selected for the study, and based on what is generally known about environmental problems, the scenario of no environmental problems and no disclosure seems unlikely. The more realistic case would be that the firms in these industries have to grapple with significant environmental issues and would, as they in fact do, make environmental disclosures.

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An International Comparison of Manufacturing-Friendly Cost Management Systems

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Key Words: Cost management; manufacturing-friendly; target-kaizen costing; world-class manufacturers

Abstract: *In this article, we perform an international comparison of cost management systems which have been claimed as manufacturing-friendly in U.S. and Japan. Specifically, we compare activity-based costing to target costing and kaizen costing, two of the most popular methods on the international horizon, regarding their relative merits in strategic cost management and operational improvement and control. A field study of a world-class Japanese auto maker, combined with an analysis of cost management literature, is relied upon to examine desirable characteristics of cost management systems that can avoid the problems many competitive manufacturers have encountered in satisfying management accounting information needs under rapidly changing market conditions in the global context.*

For the past several years U.S. and German manufacturers have been criticized for their inability to satisfy the management accounting information needs they face under rapidly changing market conditions and economic environment. They have valued, for a long time, sophisticated cost management systems in which precision, at the expense of relevance, was prized. Standard cost systems, which are still used by most manufacturers, provide a good example. The elaborate standard cost variances simply do not translate what workers do into easy-to-understand performance measures.

Recently, there have been some notable developments that deal with the above criticism. Different cost systems have been suggested for different organizational purposes in the literature. Cooper and Kaplan (1992) define an activity-based costing (ABC) model as a system designed to inform management of the economics of its past, current, and future operations, and to measure the costs of resource usage in a comprehensive manner. The ABC model, however, is not an effective mechanism for providing short-term feedback on learning and improvement activities. The short-term feedback information can be best obtained by a separate system that collects operating data continuously and reports to oper-

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ators in a timely fashion (Kaplan, 1992). For different functions and demands of an organization, such as product cost measurement, inventory valuation, and operational control, different cost systems are proposed (Kaplan, 1988, 1991), which successfully deal with the problems of standard cost systems.

Target costing and kaizen costing have been introduced in cost accounting literature as alternative cost management systems (Monden and Hamada, 1991; Sakurai, 1989). For identifying and measuring costs, Johnson (1992, p. 124) states that target costing prompts a legitimate use for ABC tools. Despite the great deal of attention it has received recently, more research on TKC is needed to "more clearly understand the concept."

In this article, we perform an international comparison of the above cost management systems which have been claimed as manufacturing-friendly in the U.S. and Japan. Specifically, we compare activity-based costing to target costing and kaizen costing regarding their relative merits in strategic cost management and operational improvement and control. We rely on a field study of a world-class Japanese auto maker and an analysis of cost management literature to examine desirable characteristics of cost management systems that can avoid the problems many competitive manufacturers have encountered in satisfying management accounting information needs under rapidly changing market conditions in the global context.

The paper is organized as follows: first, the company used as the field study site, is described. Then its overall systems for various cost management purposes are discussed, and specific issues on the relationships between the company's various cost systems and management accounting information needs are examined. Finally, we examine, in various sections, desirable characteristics of cost management systems that can address the proper management accounting information needs in the global context.

THE FIELD STUDY SITES

The sites of the field study included the head office and the main manufacturing plant of Daihatsu Motor Co. Ltd., located in Osaka, Japan. Daihatsu Motor Company, a mini-car manufacturer owned in part by Toyota, was established in 1907 as an engine manufacturer. It started the production of three-wheeler trucks in 1930 and lightweight passenger cars in 1964. Its annual net sales of mini-cars and trucks approximated US$7-8 billion in the 1990s. As of 1994, it ranked seventh of the nine Japanese automakers in terms of their domestic sales volume. In Japan, Daihatsu's mini-car sales outnumber Isuzu, Mazda, and Subaru.

Daihatsu has established mini-car markets in over 120 countries. In the U.S., Daihatsu began marketing Charade, its only U.S. passenger car, and Rocky, a sports truck, in 1988 from its subsidiary, Daihatsu America Inc. of Los Alamitos, California. In early 1992, Daihatsu announced its plan to withdraw from the U.S. market due to a company strategy change.

SYSTEMS FOR VARIOUS COST MANAGEMENT NEEDS

For financial accounting purposes, more specifically product cost measurement and inventory valuation, Daihatsu has been using standard costing for a long time. The company,

however, has understood the limitations of standard costing in cost planning and management. The limitations have been primarily the following:

1. It is very difficult to relate standard cost variances to the tasks of the operating personnel. For example, what do spending and efficiency variances mean in terms of setup and cycle time reductions and quality improvement in the manufacturing phase? What do variances explain with respect to the tasks in new product development and design? It is very hard to translate variances into what operators actually do.
2. Under standard costing, cost estimation is performed based on expected material prices, labor rates, and costs of overhead items, but it is based on current manufacturing standards. Very little connection is made to continuous improvement efforts of the whole company.
3. Pricing strategies and cost planning and management are not coordinated closely under standard costing. Sophisticated cost management is made possible through standard costing, but the sophistication is virtually wasted due to the lack of direct connection to products and pricing of products.

Daihatsu, accordingly, does not use standard cost variances for managerial decision making at all. As a matter of fact, standard cost reports are not even provided to product development and design and manufacturing departments, because the personnel in those departments do not perceive that they need them.

Before we discuss specific issues regarding cost management needs, we describe the practice of TKC, as used at Daihatsu. TKC serves as primary cost management techniques. Target costing precedes kaizen costing in the system implementation, and kaizen costing is limited to manufacturing.

Target Costing

Target costing is very closely connected with Daihatsu's long-term profit and product planning process. This connection allows the company to focus on profit and product in an integrated strategy. The overall target profit is specified for each period, and for each car model. Due to the ease of calculation and the focus on the portfolio profitability of related products, rather than on individual products, the return on sales ratio is used for setting the target profit.[1] The overall target profit is derived from the long-term profit plan and the mid-term (three years) profit plan.

Daihatsu's corporate planners start by drafting an overall corporate plan, a part of which contains new product development plans. The engineering planners define a general new product plan, which delineates how often and when new products will be developed and when car models will be changed and/or modified. Intensive market research always precedes the development of new product plans.

Product planning proposals are prepared at top management product planning meetings, the details are incorporated in the basic product plans. The cost management personnel then estimate the costs of implementing the basic product plans. Following this, cost estimates are used to evaluate whether target profits can be achieved.

Target costs are determined by a review of estimated costs and allowable costs, which, in turn, are based on current technology and manufacturing standards. The allowable cost is the goal of top management, representing target sales price minus target profit, which is very difficult to achieve in the short run.

At this point, accountants on the cost management team help engineering planners and designers decompose the target cost into each cost element according to its relationship to detailed production functions. Production engineers then evaluate resource requirements and manufacturing processes and establish standards. These standards are also used as a data base for material requirements planning (MRP).

The essential mechanism Daihatsu uses to achieve target cost is value engineering (VE). The idea behind VE is very similar to activity analysis. This was first developed and used by General Electric, although GE's activity analysis was not, and was never intended to be, linked to corporate profit planning, target profit, and target costs. VE relies on employees' devising new ways of improving their operations and reducing cost standards. Daihatsu encourages employees to propose improvements in their formal suggestion system for formal adoption.

VE analyses at Daihatsu are performed multiple times before the final blueprint for a car production is adopted. The focus here is on the difference between the target cost and the estimated cost. This evaluation serves as a basis for adjustments in the design blueprint. The cost management personnel estimate costs based on the final blueprint. The production engineers check the readiness of the production equipment and the requirements of material usage and labor hours. The standard usage requirements of those resources are usually good for one year.

The production stage begins after the target cost is finalized. The first post-audit evaluation of target cost achievement is performed three months after a new car production begins. Investigations of the causes for any deviations from the targets are conducted. The investigations also test the soundness of the target costing process itself. Figure 1 illustrates the overall process of target costing.

Kaizen Costing

Kaizen costing follows target costing in timing, since kaizen costing is used for cost management in the manufacturing phase. After target costing is used in the product development and design phase, there is a brief cost sustainment period of approximately three months before kaizen costing takes effect. Compared to a standard costing system, kaizen costing provides a more stringent means of cost management. Figure 2 shows the kaizen costing process at Daihatsu.

The focus of a standard costing system is on meeting the standards. Rather than simply meeting the standards, Daihatsu sets a cost reduction target amount and attains it through continuous improvement activities through this process. The cost reduction target amount is translated into specific actions, which allows every manager and employee to understand what to do. For example, if $15,000 of manufacturing cost reduction has been assigned to the trimming operation, the trimming area must consider how the trimming operation can be improved to achieve the assigned savings and accepted target.

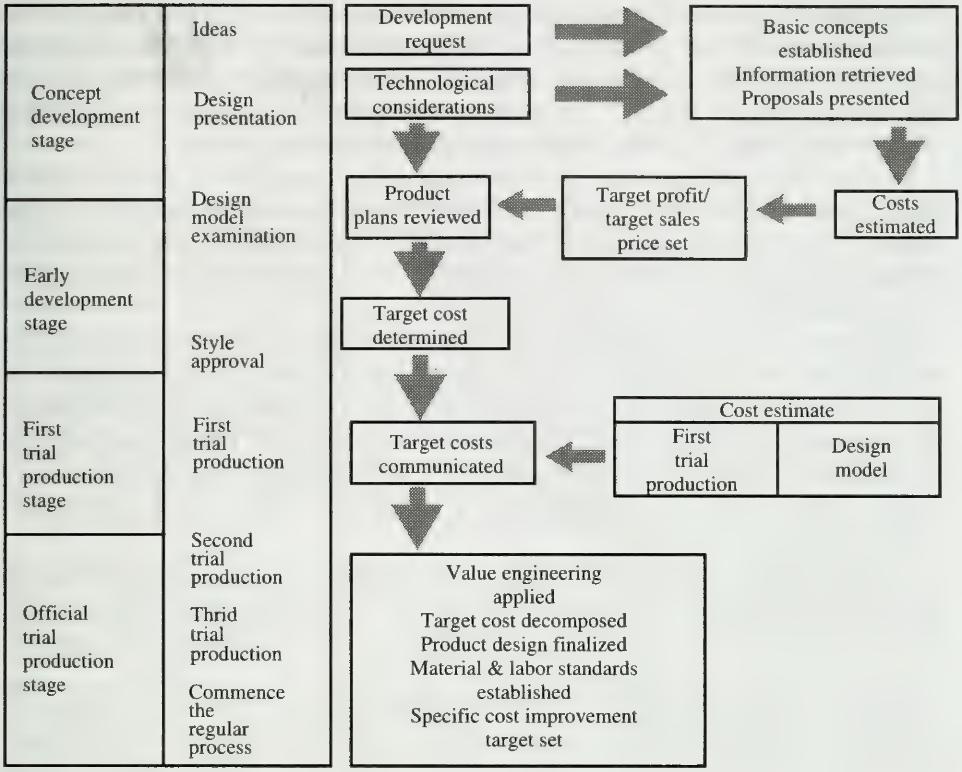

Figure 1. Target Costing Process

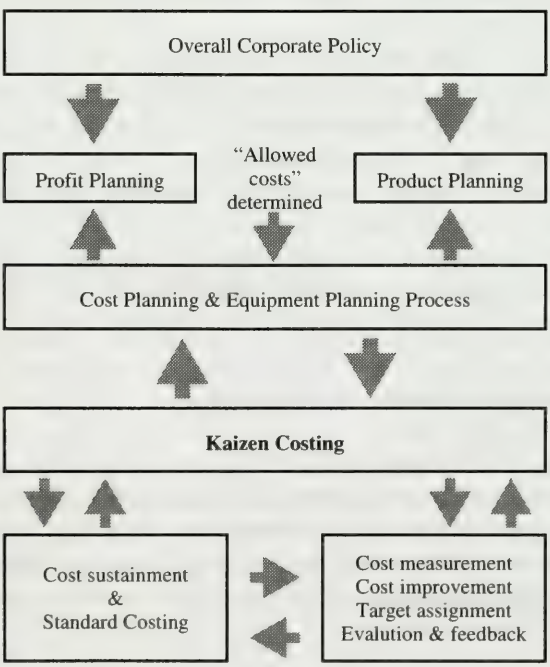

Figure 2. Kaizen Costing Process

The periodic cost-reduction process follows the annual budgeting and profit planning process, which represents the current year's segment of Daihatsu's 5-year, long-range plan. Each year all departments prepare six projections and plans, covering production, distribution and sales; projected parts and materials costs; projected reductions in manufacturing variable costs; personnel; facility investment; and other fixed expenses.

The plan on production, distribution, and sales is the central part of the current period profit planning process. The planned profit contribution amount is determined in this plan, based on the actual cost performance and estimated volumes and prices of car models for the upcoming year. Thus, the actual cost performance of the previous year becomes the cost standard for the following year.

The contribution approach is employed to determine the budgeted contribution margin, which represents budgeted sales less expected variable costs. After adjustments for expected changes in variable costs are made, expected fixed costs are subtracted from the adjusted contribution margin to yield budgeted operating profit. The budgeted operating profit is then assigned to the sales departments. Each sales department is evaluated for its actual profits relative to budgeted profits. In addition, the budget-actual comparison is made for each car model.

Labor costs are not regarded as variable costs at Daihatsu. Labor costs are treated and managed as fixed costs, since the profit plan for the whole company is the focus of their attention, and labor transfers between organizational units do not change the total labor cost.

Since the ratio of variable costs to total manufacturing costs is approximately 85%, variable cost management has become very important. In the evaluation of each department's performance, the variance between the actual cost reduction amount and the target reduction amount serves as the performance indicator. The actual cost reduction amount, called actually rationalized amount by Daihatsu, is calculated in an elaborate format, and serves as a key element of cost management.

As the proportion of fixed costs to total manufacturing costs is very low, approximately 15%, managing fixed costs is not as crucial as managing variable costs. With the exception of energy cost, the target cost reduction figure for fixed costs is not calculated in the same manner as variable costs. The budget amount for each fixed cost element is regarded as a target. The actual performance is compared to the budgeted cost for evaluation.

The target reduction rate for each cost element is calculated each year. Transportation and energy costs fluctuate on a larger scale, but, for most other cost elements, changes are minimal. Each plant is assigned an overall target reduction rate, which is comparable to the company-wide rate, although the rates can vary slightly for some plants.

Timeliness of Management Control and Information

It is very clear that Daihatsu values TKC's versatility in cost management under changing conditions within and without the company. Standard costing, in addition to its limitation in dealing with product development and design, assumes manufacturing conditions, such as manufacturing methods and operating standards, are static or unchanged during the period in question.

This assumption is unrealistic in today's global market. Unrealistic, because many product life cycles are so short, and continuous improvement in development, design, and manufacturing is crucial to the survival of companies. Merely maintaining standards is no longer enough. Furthermore, by the time new standards are in place, they could very well be inappropriate due to the changes in the conditions within and without the company.

Target costing is closely related to new product development and design. Development and design activities actually trigger target costing mechanisms, and target costing provides numerical targets for development and design. The estimated costs, as used at Daihatsu, are based on current technology and manufacturing standards. In the process of attempting to attain the allowable cost—the dream that could come true only with continuous improvement—managerial actions are translated into operational improvement. Standards, as used in standard costing systems, may very well be too static in this process, and management control using such standards is incompatible with ever-changing conditions within and without the company. The essential mechanism of VE in target costing relies on employees' devising new ways of improving their operations on a continuing basis.

The periodic cost reduction process under kaizen costing is substantially more stringent than what would be done under standard costing. Even a favorable standard cost variance would be regarded as unfavorable if the magnitude of the cost reduction is below the target reduction amount. The target reduction rate for each cost element is fixed each year, which helps enforce management's cost management programs in every plant in an ongoing manner. This is true, despite the flexibility in the assignment of the company-wide cost reduction target amount to each plant. In fact, a favorable variance is always expected, which means that every period's current performance should be better than the last period's performance.

Although Daihatsu's individual process improvement measures are not always evaluated in cost figures, its processes are. Each process is evaluated for the actual performance, which Daihatsu compares to target performance. Daihatsu would prefer an ability to measure process improvement in cost figures.[2] The results of the actual vs. target performance comparison are not used for calculating employee bonuses.The employee suggestion system is still the only incentive system at Daihatsu. When employees identify new methods of process improvement, they are encouraged to turn those new methods into formal cost reduction proposals for submission as employee suggestion system entries. TKC at Daihatsu is a "particular manifestation of a system for operations improvement and control."[3]

The Role of Actual Costs and Setting the Cost Targets

The role of actual costs in calculating costs and setting cost targets has been debated recently in cost management literature. The critics of ABC have argued that the answer to competitiveness is not to perform the activity analysis that leads to calculating ABC product costs. "Why do we really care about the cost of an activity, or a product, or a customer last year? ABC tells me where you have been. Managers want to know how to navigate for the future" (Johnson, 1992, Chapter 8; Kaplan, 1992, p. 58).

In defense of ABC, Kaplan (1992) states that historical experiences are used in the initial effort to estimate an ABC model. Patterns repeat, and the circumstances that led to a costly activity or an unprofitable product can be analyzed for corrective managerial action. When

past mistakes are revealed by an analysis based on actual data, rather than hypothetical data, managerial action is more likely to be taken.

Nothing in the theory of ABC, however, implies that it is based on historical cost data. Before they take any action, managers can reestimate the model based on current or budgeted information. Forecasted or even targeted expense and quantity data can be used. If managers can estimate, and exclude from the activity expense data, the quantity and cost of inefficient nonvalue-added operations, they will be using their ABC model as a target costing mechanism (Kaplan, 1992, p. 59).

As to the role of actual financial performance of the past periods in administering the system, Daihatsu's TKC shows some similarities to ABC. In estimating an initial ABC model, actual costs and other data from past periods on production control systems, procurement systems, engineering systems, etc. are used. The resource demands of different activities and the need for the support of those activities by products and customers are identified and employed to estimate future relationships among those in the economic model.

Under TKC, cost reduction targets are set based on standard costs which are developed from the past actual costs. More precisely, under kaizen costing, the lowest actual costs of the past periods are treated as standard costs. As in ABC, the data are not limited to past data in TKC.

In target costing, initial estimated costs minus target costs yield target reduction amounts. Also for each VE alternative, estimated costs are measured based on cost tables. In kaizen costing, two approaches, top-down and bottom-up, are used for setting cost reduction targets. The top-down approach provides a target profit amount based on management's policy decision. The bottom-up approach allows Daihatsu to estimate profit based on the current accounting estimates. The difference between the target profit and the estimated profit is the target profit improvement.[4]

How much of the target profit improvement should come from sales increases and cost reductions depends on the economic environment the company faces. In the current recession, Daihatsu relies more heavily on cost reductions since sales increases are significantly more difficult to achieve in the depressed automobile markets. In ordinary circumstances, the company expects about equal contributions from sales and cost performance.

The total manufacturing department cost reduction amount is determined using the estimated improvement amounts of each plant. Subjective judgments are made to produce realistic amounts for each plant, and then are proposed to top management. Upon receiving these proposals top management considers whether the target profit improvement would be achieved when it evaluates the proposal. This process is conducted by and large through a trial and error approach.

Each plant manager is assigned a target reduction amount by the executive director in charge of manufacturing. Further assignments are made from plant managers to department managers. Plants with declining-stage car models are assigned smaller target reduction amounts. To those plants with car models that have just been introduced, larger target reduction amounts are assigned. There is no principle to use in the target reduction amount assignment. Actual performance, measured by the ratio of target vs. actual reduction, of the past periods is carefully considered and used as the reference in the assignment. The accounting manager of the headquarters is responsible for calculating the total manufacturing target

reduction amount. Headquarters does not interfere with the plant managers' assignments of cost reduction targets to their departments.

Focus on Variable Costs

The ABC approach is "an attempt to penetrate the blob of 'fixed' overhead costs and show that most if not all of them are really variable." While covering all resources, variable and fixed, ABC has been searching for "variability and causality throughout the organization" (Kaplan, 1990, p. 5). Some advocates of the lean production paradigm, which includes programs such as just-in-time (JIT), total quality management (TQM), total customer satisfaction, employee empowerment, and continuous process improvement, among others, are however skeptical about ABC's power. "Focus on reducing variation and lead time in the work itself, and costs will take care of themselves" (Johnson, 1992, p. 154).

Daihatsu's TKC-based cost management is focused on variable costs. This is also very typical of other Japanese automakers. In the context of the variable/fixed cost dichotomy, Daihatsu's focus on variable costs means a little more than its success in reducing fixed overhead costs over decades using lean production. The high proportion (85 %) of variable costs to total manufacturing costs and Daihatsu's realization that the management of committed fixed costs is effective only in the capacity planning stage have led to its focus on variable costs.

"Delayed Actions" and Taking Actions

The benefits of using ABC in product decisions and pricing products (Harvard Business School (A), 1987) and services (Harvard Business School (B), 1987) and in dealing with profit priorities of various organizations have been clearly demonstrated (Cooper and Kaplan, 1991). The value of ABC has even been appreciated as a catalyst for change in many organizations. This has materialized through a better understanding of their organizational activities and their cost linkages in the process of identifying cost drivers for use in their ABC systems (Kaplan, 1992).

But ABC can be a catalyst for change only when management acts upon the findings of ABC. At those ABC installations, nevertheless, delays in turning the findings into action have been reported (Cooper, Kaplan, Maisel, Morrissey and Oehm, 1992). The resulting frustration on the part of ABC's proponents does not seem to be due to any inadequacy in ABC system design or implementation. Rather, Cooper et al. (1992) analyzed the delays as the organizations' inadequate preparation for radical changes in thinking and decision making called for by the ABC project (pp. 307-326).

Cooper et al. (1992) concluded that the delayed actions were caused by the lack of an explicit game plan to make the transition from ABC analysis to line manager's action a smooth reality. The plan should specify early in the ABC project: (1) which organizational unit is targeted for change; (2) who is the person involved; and (3) which senior person would authorize change actions. Otherwise, the ABC project stays within the finance and control group and does not get the acceptance and required action from operating managers. The consequence is that the organization has a more accurate understanding of how its

resources are consumed by various activities but lacks any corresponding actions to improve the bottom-line profit performance.

At Daihatsu, any actions which would lead to a reduction in activities and/or operating costs, can be taken by process managers. However, any actions that would lead to dropping products (car models) require decisions of product managers and senior management. Historically, Daihatsu has not eliminated any existing cars although a particular model might be unprofitable. The reasoning behind this is that a car model may show a loss at the operating profit level, but, at the marginal profit level, the contribution margin would usually be positive.

If the unprofitable car model were dropped, the sales decrease resulting from that action would hurt the total sales volume and parts usage. The lower demand for car parts would lead Daihatsu to have to compensate suppliers for their capacity investment. This is because suppliers make investments for producing specific parts for certain car models.

Accordingly, a decision to drop a car model for its low profitability would reduce only variable manufacturing costs. No automobile part from the existing line can be dropped, however, because the parts are needed for used cars. The task of reducing the variety of car types and component parts of each line of cars is performed in the target costing phase. The final decision is made by top management, but the essential decision maker is the product manager of each car line. The proposal to reduce the variety is made at the engineering meeting, which is chaired by the executive director of the company. If the proposal is approved for recommendation at the engineering meeting, the approved proposal is submitted to the board of directors for a formal decision.

In order to adapt to the recession the Japanese economy is experiencing as of this writing, Daihatsu is considering the possibility of reducing the variety of car parts. In the age of "bubble" economy, many car manufacturers believed that, as the scale of sales and production increases, the unit cost of car manufacturing would automatically decrease. They have learned that the unit cost does not decrease in that pattern. This lesson has led Daihatsu to undertake product and process improvement activities that would improve the bottom line profit.

Using common parts for different car types and models is one such improvement. If one common part replaces two parts that have been used on a car type, the volume of that part would double. This would help the company realize the economy of scale, which would in turn reduce the unit cost of the part. Process improvement activities also deal with reducing labor and facility costs further even though Daihatsu's fixed cost ratio is lower than that of the U.S. car makers. There is no indication at Daihatsu that product life cycle and development lead time would be extended one or two years beyond the current four years.[5]

For new models of cars, Daihatsu determines the prices when it begins the manufacturing phase. At this time, the past actual costs for each car type, such as body type, engine type, etc., become the inputs together with other pricing information. The actual costs include direct materials, overheads, and the allocation of selling and administrative expenses. These actual costs represent the costs of the existing models to be adjusted for the estimated cost changes resulting from modifications in production specifications. These estimated cost changes are computed based on computerized cost tables.

For existing models, Daihatsu usually does not make any price changes in the manufacturing stage. This is particularly true for the cars sold in the domestic market. Even in the case of a sales tax change, which would ordinarily require price change in Japan, Daihatsu

would not change prices. Prices are changed only to reflect fluctuations in the foreign exchange rate and for the changes in product options. The target cost for model change is determined, at the initial stage of product development, according to the following formula:

	Actual cost of existing model
+	Estimated model (specification) change cost
–	Target profit improvement
=	Target cost for model change

The estimated cost is decreased by the amount of target profit improvement. The target profit improvement reflects the following difference in the ratios:

	Target return on sales ratio
–	Actual return on sales ratio
=	Target profit improvement ratio

In target costing, the sales price for the proposed product is forecasted before the cost is determined. The estimated sales price which is used in target costing is different from the sales price which is determined at the beginning of the manufacturing stage.

Based on our observations and inquiries, we conclude that TKC-based cost management at Daihatsu is substantially more conducive to making changes that are deemed appropriate at the time the decisions are made, than other cost systems. Whether there is sufficient amount of analyses on the relationships between costs and actions the company takes is not clear at this point. ABC can explain those cost-action relationships through a general approach in a systematic fashion.

Would Any ABC-Type Activity Cost Information be Needed?

ABC has originally emerged as a methodology that ensures avoidance of problems related to standard costing systems through a better measurement of the costs of resource consumption in an organization. ABC draws its concept from the relationship between an organizational demand for business transactions and incurred overhead costs, identified by early innovators in U.S. industry (Miller and Vollman, 1985). ABC goes further in developing a whole new paradigm in management accounting, which allows organizations to align the costs of performing activities (transactions) with the products, customers, distribution channels and so forth, for which these activities are performed (Cooper and Kaplan, 1992).

At the present time, Daihatsu does not seem to be in need of any additional information on "an explicit estimate of the expense amounts" managers are expected to eliminate during the next year or two, which an ABC system can provide. The process of TKC allows Daihatsu to have the benefit of all the cost information the company personnel think they need.

The issue of whether Daihatsu would benefit from a system such as an ABC system can be approached from the following two aspects:

1. The answer may lie in what advocates of JIT/TQM and process improvement pro-

grams say, "Focus on reducing variation and lead time, the costs will take care of themselves" (Johnson, 1992, p. 154). The success of Daihatsu in reducing costs and improving quality without a system like ABC is also reinforced by the fact that its fixed cost ratio is so low. Daihatsu has been able to control its fixed manufacturing overhead with great success.

2. Daihatsu can see very clearly which fixed and variable resources are dedicated to which process at any given time. The "big blob of fixed costs" which cannot easily be attributed to a specific process or product, and which can usually give companies the reason for consideration and adoption of ABC, simply does not exist at Daihatsu in the way it does in less cohesive organizations. At Daihatsu, processes are very clearly dedicated to the production of certain products. Costs incurred in each process are recognized for the respective processes through the routines followed under TKC in the cost accounting system.

Cost and Quality

The project-oriented value analysis is performed by the part/product designers to investigate how the target reduction could be achieved in the areas of design, purchasing, manufacturing, etc. Project teams are formed in each area for the task. The project-oriented kaizen costing is becoming inreasingly important for Daihatsu, since the recession in the 1990s' Japanese economy makes the task of achieving targets more difficult. The whole process is applied to specific models of the existing car lines.[6]

When the final target costs are not achieved, and the investigation reveals that they are unachievable, some decisions that are made might look like a cost-quality tradeoff.[7] An intense study on cost and quality is performed in the product development stage through target costing. The cost-quality tradeoff rarely becomes an issue in the kaizen costing stage.

If manufacturing personnel improve product quality during a certain period by adding some more devices or using higher quality materials—which would reduce the incidence of customer complaints—the variable costs of manufacturing would increase. In such a case, the accounting office allows the plant to increase the target cost, which means that the target amount of kaizen costing is reduced. This would enable the plant to achieve the target cost without facing any negative effect from quality improvement.

Daihatsu does not make any direct comparison between quality improvement and manufacturing cost increase. Separate departments handle those two issues. In order to sustain the quality level, Daihatsu determines the standard quality level in the product development stage and adheres to the established level in the manufacturing stage. Surrogate measures of quality, such as the use of certain devices and material quality, are established and closely monitored. The standard quality level is set for each functional area, such as engine and chassis.[8]

The accounting department has devised a variety of different measures to reflect the efforts of employees and managers who operate under higher targets, in order to motivate them further. For example, at the present time plant employees are evaluated for cost reductions on purchased parts. When a team devises a new method of saving costs on purchased parts, it makes a formal proposal on adopting the method. The team could then

request to be evaluated on the cost reduction from the new method. Previously, only the purchasing department was evaluated for cost reductions on purchased parts.

Accountants and manufacturing personnel of Daihatsu meet at least once a month at the plant's cost meeting. This meeting is also attended by the plant manager and the manufacturing department head, and monthly cost reduction performance is reported and scrutinized.[9]

SUMMARY AND CONCLUSION

Daihatsu understands the limitations of standard costing in cost planning and management, and has confined the use of standard cost information to financial accounting. Target costing is very closely connected with the company's long-term profit and product planning process. This connection allows Daihatsu to focus on profit and product in an integrated strategy. Kaizen costing follows target costing in timing, since target costing is used in the product development and design stage. Kaizen costing is used for cost management in the manufacturing stage.

Variable cost management has become very important in cost management. The process of assigning the company-wide, cost reduction target amount to each plant is very flexible and could be subjective. The assigned costs are by and large determined using the actual costs of the previous period and actual car production quantities. How much of the target profit improvement should come from sales increases and cost reductions depends on the economic environment the company faces. The total manufacturing department cost reduction amount is based on the estimated improvement amounts of each plant.

It is very clear that Daihatsu values TKC's versatility in cost management under changing conditions within and without the company. Since product life cycles are so short in today's global market, the assumption that manufacturing methods and operating standards are static or unchanged is unrealistic. The periodic cost reduction process under TKC is substantially more stringent than what would be done under standard costing. Although each of the process improvement measures is not evaluated in cost figures, each process is. The evaluation of each process is performed for the actual performance, which is compared to target performance. Daihatsu would prefer an ability to measure process improvement in cost figures.

As to the role of actual financial performance of the past periods in administering the system, Daihatsu's TKC shows some similarities to ABC. The types of delays in turning the ABC findings into action, that have been reported at many ABC installations, are not observed at Daihatsu. At Daihatsu, any actions which would lead to a reduction in activities and/or operating costs, can be taken by process managers. Any actions that would lead to dropping products require decisions of product managers and senior management, but the issue of delayed action has never surfaced at Daihatsu.

At the present time, Daihatsu does not seem to be in need of any additional information on "an explicit estimate of the expense amounts" managers are expected to eliminate during the next year or two, which an ABC system can provide. The focus on reducing nonfinancial measures that workers can relate to, and its ability to see very clearly which fixed and variable resources are dedicated to which process at any given time, seem to indicate Daihatsu's perspective on this issue. Post-audit of performance at Daihatsu includes

TKC target achievement evaluation and follow-up actions. When the final target costs are not achieved, and the investigation reveals that it would be impossible to achieve the target costs, there could be some decisions that are made and might look like a cost-quality tradeoff. Daihatsu does not make any direct comparison between quality improvement and manufacturing cost increase.

FUTURE RESEARCH

In this field study, we intended to provide a better understanding of target costing and kaizen costing by examining the relationships between the systems a Japanese auto maker uses for product costing, cost management, and operational improvement and control. We observed that product costing is not connected to cost management, and that the company does not see any need for connecting the two. Costing and cost management are primarily process-oriented. TKC is most powerful as a "particular manifestation of an operational improvement and control system."

Based on the findings of the present study, we suggest that future research in this area be focused on the use of TKC and ABC as an integrated system, rather than as competing alternatives. It would be very productive if an actual site, where ABC employs TKC as compatible tools, could be identified and studied with respect to the interrelationships between the systems and the interactions between managerial actions and information the systems generate.

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NOTES

1. For a detailed discussion of why Japanese manufacturers prefer to use the return on sales ratio rather than the return on investment ratio in determining target profit, see Sakurai (1989, p. 43).
2. This practice is in line with what JIT/TQM and process improvement advocates preach: "Emphasize lowering defect rate, lead time, inventory level, etc. Then costs will take care of themselves." See Johnson (1992, Part II), and the response by Kaplan (1992, p. 59).
3. An ABC model is not suitable for providing short-term feedback on operations improvements. There is a need for two systems, one for ABC and another for operations improvement and control. See Kaplan (1988).
4. In determining the target cost reduction amount, Daihatsu is now moving toward a more flexible method of setting the target reduction amounts. When the target profit improvement is determined, Daihatsu relates the amount to each plant and office, specifying how much reduction needs to be realized. Target cost reduction is made not only by the manufacturing department, but also by domestic and overseas sales departments, and administrative departments.
5. In business periodicals, there have been reports that Japanese auto makers might slow the pace at which they bring out new products (*The New York Times*, 1992). The one or two years' extension of product life cycle, if implemented, would make the product life five or six years, which is still shorter than the seven years of product life for U.S. and European car makers.

6. TKC is a very stringent system of establishing and enforcing targets for cost management in all stages of product development of manufacturing. TKC, especially in the kaizen costing stage, requires evaluation and feedback on a monthly basis. There is no denying that TKC demands a lot from every employee and manager. In a recessionary period, such as the one Daihatsu experiences as of this writing, cost reduction target amounts are raised to ever higher levels, and the burden of achieving the targets gets heavier.
7. The cost-quality tradeoff issue has emerged in the discussions of cost management system choice. The Malcolm Baldridge Award of the U.S. Department of Commerce does not consider cost. It considers only quality improvement for award applicants. A Texas oil drilling equipment manufacturer, a Baldridge Award recipient, has gone bankrupt. "Documented cases exist where dramatic improvements in quality and lead time were not followed by improvements in financial performance." See Kaplan (1992, p. 60).
8. Daihatsu compiles the actual defects and the rates of defects of the materials and parts delivered by each supplier. Before Daihatsu establishes target costs, suppliers get involved in the cost surveys, and during the process of target costing, intense negotiations with suppliers take place regarding the quality, cost, and other delivery-related issues. The use of the supplier-network is extensive throughout the development-design-manufacturing cycle, and Daihatsu cultivates the supplier relationships on an on-going basis.
9. The famed rotation of personnel between departments, reported in so many studies of Japanese management practices, does not include an interchange of managers between manufacturing and accounting. Interestingly, in each plant there is a cost accounting staff, members of which could be transferred to the accounting department of the headquarters as accounting staff, and vice versa. The Daihatsu cost management department, which used to have target costing staff, now has 27 professionals, of which two are engineers. Two are responsible for project-type cost improvement, and the rest perform the accounting tasks, such as preparing the mid-term profit plan and annual profit budget, periodic kaizen costing, profit management for each product, annual accounting settlement with financial accounting area, various production volume calculations, etc.

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The International Journal of Accounting

An Investigation into the Influence of Cultural Factors in the International Lobbying of the International Accounting Standards Committee: The Case of E32, *Comparability of Financial Statements*

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Key words: Accounting subculture; comparability of financial statements; content analysis; culture; economic consequences; International Accounting Standards Committee

Abstract: *This article investigates the influence of cultural factors on the corporate comment letters sent concerning the International Accounting Standards Committee's exposure draft 32, Comparability of Financial Statements, to test Gray's hypothesized linkages between accounting values and the cultural values identified by Hofstede. For cultural values, content analyses results were consistent with the power distance and individualism hypotheses but only partly supported the femininity-masculinity and uncertainty avoidance hypotheses. For accounting subcultural values, strong support was found for the Anglo and Nordic companies' hypothesis but only weak support was evident for the Germanic and More developed Latin companies' hypothesis.*

This article investigates the influence of cultural factors on the comments submitted by companies on exposure draft 32 (E32), *Comparability of Financial Statements*, issued by the International Accounting Standards Committee (IASC). The verification or otherwise of the influence of cultural factors in determining accounting preferences is important to international standard setting bodies such as the IASC. It is necessary for the IASC to prioritize the important factors in their continuing harmonization efforts. The IASC can easily replicate the research reported in this article in respect of other international accounting exposure drafts, as they are the repository for all related comment letters.

The proposals in E32 covered 12 major International Accounting Standards (IASs) and therefore should have been perceived by internationally concerned companies to have a far-reaching impact. The topics covered by E32 are: inventory valuation and presentation; unusual and prior period items and changes in accounting policies; research

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and development activities; construction contracts; property, plant and equipment; leases; revenue recognition; retirement benefits in employers' financial statements; changes in foreign exchange rates; business combinations; capitalization of borrowing costs; and investments. This comprehensive exposure draft provides a unique opportunity to investigate the presence of cultural influences undergirding comments from companies in different nations, on many different accounting issues.

BACKGROUND

This article reports an empirical test of Gray (1988) who hypothesized linkages between accounting values and the societal values identified by Hofstede (1980, 1983). These cultural linkages were succinctly captured in further developments of Gray's work by Perera (1989, p. 47) and Perera and Mathews (1990, p. 229) in a table that is reproduced as Table 1. The content of the E32 corporate comment letters are analyzed to test hypotheses for both the cultural values identified by Hofstede and the accounting subcultural values proposed by Gray. This study uses actual data and complements questionnaire studies and conceptual analyses that explore cultural questions. Culture is not an easy phenomenon to directly measure as "it is largely invisible and unconscious" (Hofstede, 1987, p. 1). The difficulty is exacerbated by the existence of different levels or layers of culture within and across societies, such as national culture, professional culture (Fecher and Kilgore, 1994), and organizational culture. Hofstede (1980, 1983) used data regarding the subsidiaries of one multinational company (IBM) that avoided organizational subcultural differences (Hofstede, 1987, p. 4). Also, the author controlled for occupational culture (Hofstede, 1980, p. 73). However, Hofstede (1980, p. 26) stated: "Most subcultures within a society still share common traits with other subcultures, which makes their members recognizable to foreigners as belonging to that society." Therefore, the general cultural characteristics of a society should still be discernible to investigators despite the presence of many different subcultures in that society. In addition to the studies already mentioned, several approaches have been used to evaluate the impact on accounting matters of national culture and of various subcultures in society.

At the national culture level, Riah-Belkaoui and Picur (1991) used a questionnaire approach to investigate the effect of culture on the perception of 12 accounting concepts by managers/partners of a Big Six accounting firm. Their research design controlled for organizational culture, occupational culture, managerial culture, and linguistic relativism. The findings supported the hypothesis of significant influence of national culture in the perception of accounting concepts in two of three perceptual dimensions. Cohen, Pant and Sharp (1993) investigated the potential impact of international cultural differences on auditors' ethical perceptions of suspect client behavior, using Hofstede's (1980, 1991) model. Schreuder (1987) reported the results of research by Soeters and Schreuder (1986) that in part suggested a significant influence of U.S. culture on the organizational culture of Big Eight firms operating in Holland.

At the subculture level, Thomas (1989) developed a conceptual framework that utilized mailed questionnaires to study the impact of organizational culture on the selection of accounting methods. In five of seven cases, the results of the questionnaire survey were consistent with the expectation that the professional accounting subculture exerted a significant influence in the selection of accounting practices. In the context of

Table 1. Societal Values and Accounting Practice—Perera's (1989, p. 47) presentation

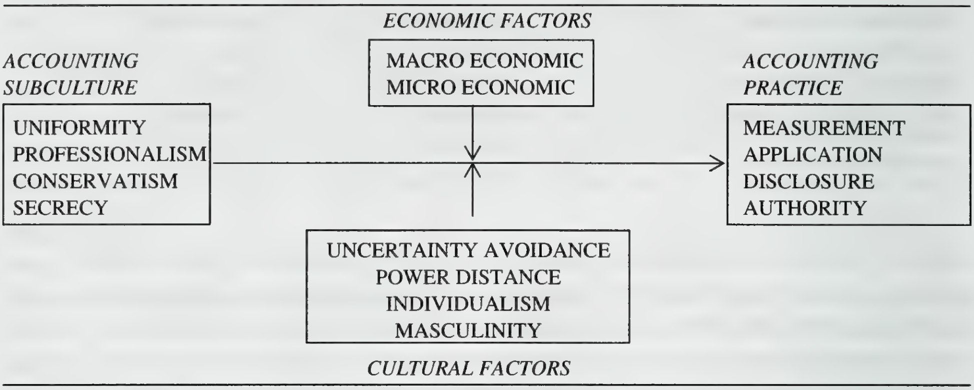
Societal values managerial /work related values →	Accounting values →	Accounting practice
Individualism vs collectivism	Professionalism	Authority
Large vs small power distance	Uniformity	Application
Strong vs weak uncertainty avoidance	Conservatism	Measurement
Masculinity vs femininity	Secrecy	Disclosure

auditor's probabilistic judgments, Ho and Chang (1994) found that professional or organizational culture dominated the influence of national culture. Organizational and professional influences also may dominate the impact of national culture on the contents of comment letters sent to the IASC.

Other forces besides cultural factors affect accounting preferences. Tang (1994, p. 148) identified three major schools of thought regarding the influential forces in the determination of accounting standards: (1) the well rehearsed economic effects of accounting policy choice; (2) the technical nature of accounting policies that can be determined by reference to a conceptual framework; and (3) the influence of cultural factors in shaping accounting preferences. Tang considered a cost-benefit model in the context of Chinese joint venture accounting. He concluded that accounting standard harmonization is a political process between various interest groups, with social, economic, and cultural impacts of accounting policy choice dominating technical accounting issues (p. 157). In questioning the significance of cultural values in the determination of accounting practice, Montagna (1987, p. 25) stated "just as important are the effects of material interests, of influence, indeed of exploitation, by control of economic wealth and technology, on our ideas and attitudes." However, these economic and other issues could be considered a part of culture or as intertwined with societal values in some way.

Cultural phenomena and economic factors are likely linked together. For example, Bloom and Naciri (1989, p. 71) considered "the economic, political, and social environment" to be components of "the country's culture and traditions." Ray and Gupta (1993) recognized the cultural variables of uncertainty avoidance and professional accounting as environmental factors that help determine the amount invested in external financial accounting systems to reduce transaction costs. Also, Fechner and Kilgore (1994, pp. 274-275) proposed an interplay between economic variables and cultural variables in determining accounting practice, as depicted in a figure that is reproduced as Table 2. They argue that environmental factors are more likely to be moderating variables rather than intervening variables. For example, the desire to minimize corporate income taxes may dictate the preference of LIFO for inventory valuation in the U.S. and not be a reflection of the degree of conservatism in the accounting subculture. In other cases, the accounting subculture may be the major factor that influences accounting method choice. Such cause-effect relationships might be difficult to identify in some cases. For example, the tax laws that strongly influence people in a society are determined by people in government who are themselves exposed to the cultural forces that exist in that same society. Also, in democratic societies, the tax laws that influence

Table 2. Fechner's and Kilgore's (1994, p. 275) Modified Theoretical Framework



people in their decisions are determined by the same people via their elected representatives.

In research on the capital market impact of international accounting diversity, Choi and Levich (1990) considered the multiple issues involved with accounting diversity *vis-à-vis* accounting harmonization. These issues include "national macroeconomic, tax, regulatory, and cultural differences" (p. 91). Comments on E32 are likely to reflect a multitude of concerns regarding the likely harmonization benefits (e.g., increased international capital market activity and efficiency, p. 93) and harmonization costs (e.g., extra preparation costs, competitive costs through additional disclosure, and political costs from external interference with the tax base, i.e., reported net income that affects national sovereignty in such matters, p. 94). Choi and Levich (1991) summarized the major findings of their accounting diversity research.

Gray (1988) did recognize the impact of factors other than accounting subculture on the development of accounting systems. The author identified the impact of "institutional consequences" as well as "accounting values" in determining the "accounting systems" of countries (p. 7). For instance, institutional consequences include corporate ownership and capital markets that surely include economic considerations. Also, the institutional consequence of professional associations must include the impact of experience-related, professional knowledge, as discussed by Ho and Chang (1994).

The research reported in this article is designed to identify the effect of culture on corporate accounting preferences from publicly available comment letters mailed to the IASC, a secondary data source. Cultural values can be manifested through words and language (Hofstede, 1987; Thomas, 1989). Written comment letters represent actual work behavior on the part of managers and they complement questionnaire surveys and the conceptual reasoning/analysis of cultural researchers that have been used to gain insight into the social values of managers (e.g., Hofstede, 1980, 1983; Gray 1988). Using alternative research methodologies such as content analysis helps to test the validity of extant research findings (Hofstede and Schreuder, 1987). Discovery research using content analysis allows the researcher to see the matters that the subjects feel are important. The subjects select their own words, decide the depth of detail, the intensity of their language, and the length of the message. Using the content analysis methodol-

ogy, the onus of language interpretation is on the researcher and not the subject as in the case of questionnaire surveys. Given the results of the research studies outlined above, corporate comments that reflect economic concern also were noted, along with cultural statements.

METHODOLOGY

Using content analysis, the corporate comment letters on E32 were read to identify statements that indicate the cultural values identified by Hofstede (1980, 1983) and the related accounting subcultural values suggested by Gray (1988). Comments indicating concern for economic consequences also were noted because of their likely influential nature in determining corporate comments (Watts and Zimmerman, 1986).

The corporate comment letters were copied onto a floppy disk for further content analyses, such as word searches, using word processing software. The comment letters on the E32 proposals are publicly available from the IASC. Content analysis methods have been utilized in other international accounting studies (Freedman and Stagliano, 1992; MacArthur, 1993).

By focusing on the content of comment letters, this research partly complements the study by Laswad and Mak (1994) that identified different expressions of uncertainty used in accounting standards published in Australia, Canada, New Zealand, Singapore, the U.K. and the U.S.A. Strong versus weak uncertainty avoidance is one of the major cultural value dimensions that was identified by Hofstede (1980, 1983).

Hofstede (1991) was particularly helpful in successfully conducting the content analysis to test the cultural hypotheses in the context of: (1) general norm, family, school, and workplace; and (2) politics and ideas, because eight tables list key differences between small and large power distances (pp. 37, 43), collectivist and individualist societies (pp. 67, 73), feminine and masculine (pp. 96, 103), and weak and strong uncertainty avoidance (pp. 125, 134).

The comments of companies were examined because they would be directly affected by the implementation of the exposure draft proposals. Corporate comments were received from 47 companies distributed between nine countries as follows (numbers of companies in parentheses): Australia (12), Canada (6), France (3), Germany (1), Netherlands (1), Netherlands and U.K. (2), South Africa (1), Switzerland (4), the U.K. (7), and the U.S.A (10) (see Appendix A).

Given the extensive coverage of E32 (proposing amendments to 12 IASs), 47 corporate submissions from around the world may appear rather low. However, a low response rate on international exposure drafts is a common occurrence (Chandler, 1992, p. 226). Perhaps the poor response rate is at least partly due to the IASC, like the International Federation of Accountants, lacking power to enforce its standards, but this may change with the support of the International Organization of Securities Commissions (IOSCO) (Chandler, 1992, pp. 228-231). Recently IOSCO agreed to endorse a comprehensive core set of IASs once they are all developed "for cross-border capital raising and listing purposes in all global markets" ("Technical Update," 1995).

HYPOTHESES

The development of the research hypotheses is divided into two parts. First, hypotheses are developed for the cultural values identified by Hofstede (1980, 1983). Second, hypotheses are developed for the accounting subculture to test Gray's (1988) proposals.

Cultural Values Hypotheses

The rankings discussed in this section are taken from Hofstede (1991).

Large versus Small Power Distance

Hofstede (1991, p. 28) defined power distance in the following way:

> Power distance can therefore be defined as *the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally.* 'Institutions' are the basic elements of society like the family, school, and the community; 'organizations' are the places where people work.

Of the nine countries with companies that lobbied on E32, France is the only country that was consistently considered by Hofstede to have a large power distance (LPD), with a rank of 15/16 of 53. South Africa is the next highest ranking country at 35/36 of 53, that placed it approximately in the bottom third of the scores and indicated a relatively small power distance (SPD).

The following societal characteristics relating to power distance were especially helpful in the content analysis of the E32 comments (in the context of general norm, family, school, and workplace) (p. 37):

In SPD societies:

- "There should be, and there is to some extent, interdependence between less and more powerful people;"
- "Subordinates expect to be consulted."

In LPD societies:

- "Less powerful people should be dependent on the more powerful;"
- "Subordinates expect to be told what to do."

Phrases in E32 comments that indicate a large power distance context include those that convey an organizational need for, or expectation of, authoritarian standards. Organizations in small distance societies are likely to support participation and the need for general acceptance of international accounting standards. It is expected that:

> **H1**: *The comments on E32 from More developed Latin (French) companies are consistent with a large power distance society and the comments of Anglo (Australian, Canadian, South African, U.K., and U.S.A), Nordic (Netherlands), and Germanic (German and Swiss) companies are consistent with small power distance societies.*

Individualism versus Collectivism

Hofstede (1991, p. 51) defined the individualism dimension as follows:

> *Individualism* pertains to societies in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family. *Collectivism* as its opposite pertains to societies in which people from birth onwards are integrated into strong, cohesive ingroups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty.

In Hofstede's research, all nine countries of the corporate lobbyists on E32 scored in the top third in terms of the individualism dimension. The least individualistic country was South Africa that was ranked 16 of the 53 countries. Companies resident in individualistic nations might be expected to express their opinions to a standard-setting body such as the IASC.

Hofstede (1991) observed many important differences between collectivist and individualist societies in various societal roles. Characteristics of individualistic societies that were especially helpful in the content analysis of the E32 comments are the following:

1. In the context of general norm, family, school, and workplace:
    - "Preferential treatment of one customer over others is considered bad business practice and unethical" (p. 66);
    - "Identity is based in the individual" (p. 67);
2. In the context of politics and ideas (p. 73):
    - "Individual interests prevail over collective interests;"
    - "Everyone is expected to have a private opinion;"
    - "Laws and rights are supposed to be the same for all."

Examples of E32 comments that convey an individualistic perspective include phrases such as "in our opinion" and "we believe." Also, corporate recognition of the needs of users of accounting information, readers of financial statements, stockholders, shareholders, and creditors. It is expected that:

> **H2**: *The comments on E32 from companies in all nine countries are consistent with individualism in their societies.*

Femininity and Masculinity

Hofstede (1991, pp. 82-83) defined the masculinity-femininity cultural dimension in the following way:

> *masculinity* pertains to societies in which social gender roles are clearly distinct (i.e., men are supposed to be assertive, tough, and focused on material success whereas women are supposed to be more modest, tender, and concerned with the quality of life); *femininity* pertains to societies in which social gender roles overlap (i.e., both men and women are supposed to be modest, tender, and concerned with the quality of life).

In essence, "material success and progress" dominate the values of masculine societies whereas "caring for others and preservation" dominate the values of feminine societies (p. 96).

Of the nine lobbyist countries, France (ranked 43 of 53) and the Netherlands (ranked 51 of 53) were considered by Hofstede to be feminine nations and the remainder were classified as masculine countries. Feminine comments exhibit concern for the effect E32 proposals would have on other organizations and countries. Masculine comments emphasize the importance of progress in harmonization and choice of accounting principles over their effect on other organizations and nations. It is hypothesized that:

> **H3**: *The comments on E32 from More developed Latin (French) and Nordic (Netherlands) companies are consistent with "feminine" societies and the comments of Anglo (Australian, Canadian, South African, U.K., and U.S.A), and Germanic (German and Swiss) companies are consistent with "masculine" societies.*

Strong versus Weak Uncertainty Avoidance

Hofstede's (1991, p. 113) definition of uncertainty avoidance is:

> *the extent to which the members of a culture feel threatened by uncertain or unknown situations.* This feeling is, among other things, expressed through nervous stress and in a need for predictability: a need for written and unwritten rules.

Uncertainty avoidance is not the same as risk avoidance. Risk can be measured in probability terms but uncertainty cannot. Uncertainty avoidance reduces *ambiguity* and *anxiety* (that relate to general feelings) rather than lowering *risk* and *fear* (that relate to more specific, concrete things) (p. 116).

France (ranked 10/15 of 53), Germany (ranked 29 of 53), and Switzerland (ranked 33 of 53) were considered by Hofstede to have strong uncertainty avoidance. The remaining countries with corporate commentators on E32 are classified among the weak uncertainty avoidance nations.

The following societal characteristics relating to uncertainty avoidance were especially helpful in the content analysis of the E32 comments (in the context of general norm, family, school, and workplace) (p. 125):

1. In strong uncertainty avoidance societies:

    - "The uncertainty inherent in life is felt as a continuous threat which must be fought;"
    - There is "fear of ambiguous situations;"
    - "What is different, is dangerous."

2. In weak uncertainty avoidance societies:

    - "Uncertainty is a normal feature of life and each day is accepted as it comes;"
    - People are "(c)omfortable in ambiguous situations;"
    - "What is different is curious."

Comments that reflect uncertainty avoidance include statements on ambiguity, subjectivity versus objectivity, verifiability, arbitrariness, certainty versus uncertainty, and doubt. It is expected that:

> **H4**: *The comments on E32 from More developed Latin (French) and Germanic (German and Swiss) companies are consistent with strong uncertainty avoidance societies and the comments of Anglo (Australian, Canadian, South African, U.K., and U.S.A.), and Nordic (Netherlands) companies are consistent with weak uncertainty avoidance societies.*

Accounting Subcultural Values Hypotheses

The two hypotheses in this section are presented after the discussion on four accounting subcultural dimensions.

Professionalism versus Statutory Control

According to Gray (1988, p. 8), professionalism versus statutory control is "a preference for the exercise of individual professional judgment and the maintenance of professional self-regulation as opposed to compliance with prescriptive legal requirements and statutory control." Countries with relatively high individualism, low uncertainty avoidance, and low power distance were classified as professionally oriented.

All nine countries of the corporate lobbyists on E32 were placed by Gray in the professionalism category. It is not surprising that companies resident in countries where professionalism dominates would lobby the privately sponsored and financed IASC. In effect, this corporate involvement with IASC accounting proposals supports the self-regulation of accounting matters.

Comments in support of professionalism include statements:

- in support of the work of the IASC towards harmonizing accounting standards worldwide;
- indicating the need for professional judgement;
- in support of a conceptual framework for accounting standards;
- that invoke accounting principles and concepts to support stated preferences.

By definition, comments in support of statutory control exhibit a preference for mandated accounting standards.

Uniformity versus Flexibility

According to Gray (1988, p. 8), uniformity versus flexibility is "a preference for the enforcement of uniform accounting practices between companies and for the consistent use of such practices over time as opposed to flexibility in accordance with the perceived circumstances of individual companies." Countries with relatively high uncertainty avoidance, high power distance, and low individualism were positioned by Gray in the uniformity category. These countries included three with corporate lobby-

ists on E32 (i.e., France, Germany, and Switzerland). The remaining six countries with E32 corporate lobbyists were included by Gray in the flexibility category (i.e., Australia, Canada, Netherlands, South Africa, U.K., and U.S.A.).

Comments in support of flexibility include statements:

- in support of more than one accounting option to meet the different needs of countries and companies;
- that express concern that meaningful reporting must not be sacrificed in the search for mechanical uniformity;
- that harmonization is not the same as rigid standardization;
- that point out the need for evolving accounting principles to adapt to changing needs.

In line with Gray's definition, comments that support specified accounting methods (e.g., capitalization or expensing) for particular circumstances (e.g., the degree of certainty as to future events), are included as indicating corporate support for flexibility. Wolk and Heaston (1992) called this restricted flexibility in accounting method choice "finite uniformity" and used the term "rigid uniformity" when a single accounting method is prescribed for a particular accounting event irrespective of the circumstances.

Comments that support uniformity stress the need to eliminate or to reduce alternatives (e.g., to enhance the comparability of financial statements).

Conservatism versus Optimism

According to Gray (1988, p. 8), conservatism versus optimism is "a preference for a cautious approach to measurement so as to cope with the uncertainty of future events as opposed to a more optimistic, laissez-faire, risk-taking approach." Countries with relatively high uncertainty avoidance, low individualism, and low masculinity were classified by Gray as conservative. These countries included three with corporate lobbyists on E32 (i.e., France, Germany, and Switzerland). The remaining six countries with E32 corporate lobbyists were included by Gray in the optimism category (i.e., Australia, Canada, Netherlands, South Africa, U.K., and U.S.A.).

Clear preferences for inclusion of credit items (e.g., gains) in the income statement or exclusion/deferral of debit items (e.g., losses) from the income statement are considered in this research to be optimistic measurements. Clear preferences for the exclusion/deferral of credit items from, or the inclusion of debit items in, the income statement, are considered to be conservative measurements. For instance, a preference for the immediate expensing of development costs is considered to be conservative whereas support for their inclusion in the accounts as assets is classified as optimistic.

Preference for LIFO inventory valuation is considered to be conservative because in times of rising prices the income statement will include the latest and highest inventory costs in cost of goods sold. During inflationary periods, a smaller net income will be reported using LIFO than when FIFO or weighted average is used to value inventory. Of course, economic motivations, such as lower taxable profits, may motivate some companies to favor LIFO (e.g., US companies), rather than cultural factors. Economic factors mentioned in company comments are reported below in the section on eco-

nomic consequences. Statements supporting elimination of LIFO are classified as optimistic.

Preference for projected benefit valuation methods is considered to be more conservative than preference for accrued benefit valuation methods. Projected benefit methods base the cost of retirement benefits on the existing *and* future services of employees whereas accrued benefits valuation methods consider the existing services of employees only. Therefore, support for accrued benefit methods is an optimistic choice.

Also, comments expressing concern that a proposal in E32 is too conservative (insufficiently conservative) are classified as optimistic (conservative). Statements that simply stated "agreed" or "disagreed" (or similar) for individual E32 measurement proposals were not classified as optimistic or conservative. Preferences had to be supported by reasoned narrative to be included in the content analysis results. It is assumed that preferences supported by narrative are the items of real concern to corporate commentators. The intensity of the communication needs to be considered along with its direction (Osgood, Suci and Tannenbaum, 1957, pp. 26-30).

Secrecy versus Transparency

According to Gray (1988, p. 8), secrecy versus transparency is "a preference for confidentiality and the restriction of disclosure of information about the business only to those who are closely involved with its management and financing as opposed to a more transparent, open and publicly accountable approach." Countries with relatively high uncertainty avoidance, high power distance, low individualism, and low masculinity were positioned by Gray in the secrecy category. These countries included the same three corporate lobbyists on E32 that are considered to be conservative (i.e., France, Germany, and Switzerland). This is not surprising as secrecy in disclosure is equivalent to conservatism in measurement. The remaining six countries with E32 corporate lobbyists were included by Gray in the transparency category (i.e., Australia, Canada, Netherlands, South Africa, U.K., and U.S.A.).

Naturally, comments that support disclosure of information are considered to reflect transparency whereas statements in favor of restricting disclosures are considered to be evidence of secrecy. Corporate comments in favor of maintaining "hidden reserves" also reflect secrecy.

Hypotheses

Based on Gray (1988), in regards to accounting values, it is expected that:

> **H5**: *The comments on E32 from Anglo (Australian, Canadian, South African, U.K., and U.S.A.) and Nordic (Netherlands) companies exhibit predominantly preference for professionalism and flexibility (in regards to authority and enforcement) and optimism and transparency (in regards to measurement and disclosure).*

> **H6**: *The comments on E32 from Germanic (German and Swiss) and More developed Latin (French) companies exhibit predominantly preference for professionalism and uniformity (in regards to authority and enforcement) and conservatism and secrecy (in regards to measurement and disclosure).*

Table 3. Descriptive Statistics on Corporate Comment Letters

Culture areas/ Countries	*Number of pages*	*Number of corporate commentators*	*Average number of pages*	*Ranking (highest average # of pages = 1)*
Anglo:				
Australia	66	12	5.5	4
Canada	46	6	7.7	2
South Africa	3	1	3.0	8
U.K.	24	7	3.4	7
U.S.A.	60	10	6.0	3
Anglo Total	199	36	5.5	
Anglo / Nordic:				
Netherlands / U.K.	8	2	4.0	5/6
Germanic:				
Germany	13	1	13.0	1
Switzerland	8	4	2.0	9/10
Germanic Total	21	5	4.2	
More developed Latin:				
France	12	3	4.0	5/6
Nordic:				
Netherlands	2	1	2.0	9/10
Grand Total	242	47	5.1	

CONTENT ANALYSIS RESULTS

The comment letters on E32 from the 47 companies contained 242 pages with an average letter length of over five pages. The total numbers of pages and average letter size for each country are shown in Table 3. The German, Canadian, and U.S.A corporate letters had the three highest average number of pages. The Netherlands and Swiss company letters contained the lowest average number of pages. There does not appear to be any discernible pattern of average letter length in terms of the Anglo, Germanic, More developed Latin, and Nordic culture areas.

The comment letters of one French company and two of its subsidiaries (one French and one Swiss company) are very similar, with identical wording in parts. They are treated as three separate companies in the results reported below. This may be an example of affiliated foreign companies within a dominating organizational culture.

Unless otherwise indicated, page numbers in this section and the sections that follow refer to the E32 corporate comment letters sent to the IASC (1990).

Culture Results

Large versus Small Power Distance

The content analysis results supported the power distance **H1** (Table 4). The comments of the three French lobbyists exhibited large power distance (LPD), as expected.

Table 4. Large versus Small Power Distance

Country[1]	*Power distance index score*	*Rank (out of 50 countries and 3 regions)*	*Large power distance (% of companies)*	*Small power distance (% of companies)*	*Neither (% of companies)*	*Total # of companies*
Large power distance						
France	68	15 /16	3[2] (100%)	—	—	3
Small power distance						
South Africa	49	35/36	—	—	1[3] (100%)	1
U.S.A.	40	38	1 (10%)	5[4] (50%)	4[5] (40%)	10
Canada	39	39	—	3 (50%)	3 (50%)	6
Netherlands	38	40	—	1 (100%)	—	1
Neth. /U.K.	36.5[6]	—	—	2 (100%)	—	2
Australia	36	41	1 (8%)	6[7] (50%)	5 (42%)	12
Germany FR	35	42 /44	1[8] (100%)	—	—	1
U.K.	35	42 /44	1 (14%)	3 (43%)	3 (43%)	7
Switzerland	34	45	—	1 (25%)	3[9] (75%)	4
Total			7 (15%)	21 (45%)	19 (40%)	47

Notes: 1. Key: Neth.= Netherlands.
2. Includes one company with a small power distance (SPD) statement but large power distance (LPD) statements dominate.
3. Comment letter includes two SPD and two LPD statements.
4. Includes two companies with a LPD statement but SPD statements dominate.
5. Includes a company with two LPD and two SPD statements.
6. The Netherlands/U.K. power distance index is the simple average of the Netherlands (38) and U.K. (35) power distance indices (i.e., [38+35]/2).
7. Includes one company with three references to Australian legal requirements but SPD statements are dominant.
8. Includes 7 SPD references but LPD statements are dominant.
9. Includes a company with one LPD and one SPD statement.

Of the remaining 44 company comment letters, 21 evidenced small power distance (SPD), 19 did not clearly exhibit either LPD or SPD, and only four indicated LPD.

In the case of some companies, the individual comments did not consistently indicate LPD or SPD. For example, one French company stated the corporate "(n)eed for a recognized, authoritative body of international accounting principles" (IASC, 1990, p. 548), that is consistent with LPD. The same French company also stated that a lack of flexibility in IASs might result in the IASC losing the support of international groups of companies including themselves (p. 549), that indicates SPD. This company is classified in the LPD category because of another statement that indicated their recognition of imposed requirements (p. 550). On balance, LPD was the dominant emphasis of the French company's comments. Mixed results were also obtained for some of the other cultural and subcultural characteristics as indicated in their respective tables.

The German company comment letter is consistent with a LPD society although consistency with a SPD society was hypothesized. For example, in discussing the accounting proposals, the German comments referred to HGB (Commercial Code) 11 times, tax law/

Table 5. Individualism

Country[1]	*Individualism index score*	*Rank (out of 50 countries and 3 regions)*	*Individualism (% of companies)*	*Individualism not identified (% of companies)*	*Total # of companies*
Individualistic:					
U.S.A.	91	1	10 (100%)	—	10
Australia	90	2	9 (75%)	3 (25%)	12
U.K.	89	3	5 (71%)	2 (29%)	7
U.K./Netherlands	84.5[1]	—	2 (100%)	—	2
Canada	80	4/5	6 (100%)	—	6
Netherlands	80	4/5	1 (100%)	—	1
France	71	10/11	2 (67%)	1 (33%)	3
Switzerland	68	14	3 (75%)	1 (25%)	4
Germany FR	67	15	—	1 (100%)	1
South Africa	65	16	1 (100%)	—	1
Total			39 (83%)	8 (17%)	47

Note: 1. The U.K./Netherlands individualism index is the simple average of the U.K. (89) and Netherlands (80) individualism indices (i.e., [89+80]/2).

Table 6. Femininity-masculinity

Country[1]	*Masculinity index score*	*Rank (out of 50 countries and 3 regions)*	*Masculine (% of companies)*	*Feminine (% of companies)*	*Neither (% of companies)*	*Total # of companies*
Masculine:						
Switzerland	70	4/5	—	1 (25%)	3 (75%)	4
U.K.	66	9/10	—	1 (14%)	6 (86%)	7
Germany FR	66	9/10	—	—	1 (100%)	1
South Africa	63	13/14	—	—	1 (100%)	1
U.S.A.	62	15	1 (10%)	2 (20%)	7 (70%)	10
Australia	61	16	3[2] (25%)	3 (25%)	6 (50%)	12
Canada	52	24	—	1 (17%)	5[3] (83%)	6
Feminine:						
France	43	35/36	—	2 (67%)	1 (33%)	3
U.K. (M)/Neth. (F)[4]	40[5]	—	—	1 (50%)	1 (50%)	2
Netherlands	14	51	—	1 (100%)	—	1
Total			4 (9%)	12 (25%)	31 (66%)	47

Notes: 1. Key: Neth. = Netherlands.
2. Includes a company with one "feminine" statement but "masculine" statements are dominant.
3. Includes one company with two "feminine" and two "masculine" statements.
4. Two companies that are joint U.K. (a masculine country [M]) and Netherlands (a feminine country [F]). The average masculinity index score places them in the feminine countries group.
5. The U.K./Netherlands masculinity index is the simple average of the U.K. (66) and Netherlands (14) masculinity indices (i.e., [66+14]/2).

regulations six times, and German Commercial Law four times. For instance, in the context of the IASC's preference for current investments to be measured at market values, the corporate comments state (pp. 565-566): "This accounting regulation is not consistent with the requirements of the German commercial law....This treatment should be rejected." Such references convey a recognition of the power of a higher authority in accounting matters. Only seven statements could be interpreted as indicative of a SPD society.

Individualism

The content analysis results supported the individualism **H2** (Table 5). Overall, individualistic statements were identified in 39 (83%) of the corporate comment letters. For example, one Canadian company stated (p. 513):

> Being a company which produces and distributes natural resources, we have formulated financial and operational policies which recognize our major concern of ensuring equity in the allocation of our services and costs between current and future customers.

Femininity and Masculinity

The content analysis results partly support the femininity-masculinity **H3** (Table 6). As expected, the comments of French and Netherlands companies (including one Dutch/U.K. company) show clear evidence of concern for other organizations and countries (i.e., "femininity"). In the "masculine" grouping shown in Table 6, more companies are classified as "feminine" (eight) and fewer are classified as "masculine" (four) than was expected. Perhaps, companies that make the effort to express concern about international accounting proposals are aware of, and through subsidiary relationships are affected by, the diverse needs of companies, individuals, and other organizations throughout the world.

For example, one Australian company made the following "feminine" statement (p. 455): "We acknowledge, that for the above to succeed, a simple and practical system for voting on changes to International Accounting Standards must be devised which is, and is seen to be, fair to all member countries." In contrast, another Australian company made the following "masculine" comment (pp. 469-470):

> The basis on which the preferred treatment has been chosen seems to us extremely weak. There has been no attempt to make any sort of case for the superiority of historical cost: instead, the preference is based simply upon its widespread use.

Strong versus Weak Uncertainty Avoidance

The content analysis results partly support the uncertainty avoidance **H4** (Table 7). As hypothesized, the comments of French and Germanic companies contain statements that show strong uncertainty avoidance (SUA). In the grouping of the other 39 companies shown in Table 7, more companies than expected exhibit SUA in their comments (15) and fewer (3) exhibit weak uncertainty avoidance (WUA).

In particular, the U.S.A. results were surprising with eight (80%) of the company comments including statements associated with SUA. For example, one U.S. company

Table 7. Uncertainty Avoidance

Country[1]	*Uncertainty avoidance index score*	*Rank (out of 50 countries and 3 regions)*	*Strong uncertainty avoidance (% of companies)*	*Weak uncertainty avoidance (% of companies)*	*Neither (% of companies)*	*Total # of companies*
Strong uncertainty avoidance:						
France	86	10/15	3 (100%)	—	—	3
Germany FR	65	29	1 (100%)	—	—	1
Switzerland	58	33	3 (75%)	—	1 (25%)	4
Weak uncertainty avoidance:						
Netherlands	53	35	—	—	1 (100%)	1
Australia	51	37	3[2] (25%)	3[3] (25%)	6[4] (50%)	12
South Africa	49	39/40	1 (100%)	—	—	1
Canada	48	41/42	—	—	6[5] (100%)	6
U.S.A.	46	43	8[6] (80%)	—	2 (20%)	10
Neth./U.K.	44[7]	—	1 (50%)	—	1 (50%)	2
U.K.	35	47/48	2 (29%)	—	5 (71%)	7
Total			22 (47%)	3 (6%)	22 (47%)	47

Notes: 1. Key: Neth. = Netherlands.
2. Includes a company with a weak uncertainty avoidance (WUA) statement but strong uncertainty avoidance (SUA) statements are dominant.
3. Includes a company with a SUA statement but WUA statements are dominant.
4. Includes a company with one SUA and one WUA statement.
5. Includes a company with one SUA and one WUA statement.
6. Includes a company with two WUA statements but SUA statements are dominant.
7. The Netherlands/U.K. uncertainty avoidance index is the simple average of the Netherlands (53) and U.K. (35) uncertainty avoidance indices (i.e., [53+35]/2).

stated (p. 624): "Our mutual goal is to assure that consistent, reliable, verifiable, and useful information is disclosed." Also, this company and three other U.S. companies expressed concern over proposals that they perceived increased subjectivity or reduced objectivity. Perhaps, the increasingly litigious U.S. society caused corporate executives in 1989 to be more cautious than the U.S. IBM employees included in the 1967-1969 and 1971-1973 IBM employee attitude survey data that was analyzed by Hofstede (1980, 1983). Two of the seven U.K. company comment letters exhibited strong uncertainty avoidance and the numbers of lawsuits and size of claims affecting accountants also have shown a rising trend in the U.K. (Nobes, 1985; Woolf, 1986).

Accounting Subculture Results

Appendix B contains examples of accounting subcultural statements in the E32 comment letters that tie into the results discussed in this section.

Table 8. Uniformity, Flexibility, Statutory Control, and Professionalism Statements by Australian, Canadian, Netherlands, South African, U.K., and U.S. Companies[1]

	Uniformity	*Flexibility*	*Neither*	*Total*
Statutory control	1	0	0	1
Professionalism	2	30	6	38
Neither	0	0	0	0
Total	3	30	6	39

Note: 1. Where there are conflicting statements in the comment letters (e.g., some that suggest uniformity and others that indicate flexibility), the classification is made according to the dominant statements.

Table 9. Secrecy, Transparency, Conservatism, and Optimism Statements by Australian, Canadian, Netherlands, South African, U.K., and U.S. Companies[1]

	Secrecy	*Transparency*	*Neither*	*Total*
Conservatism	0	1	1	2
Optimism	0	13	7	20
Neither	0	8	9	17
Total	0	22	17	39

Note: 1. Where there are conflicting statements in the comment letters (e.g., some that suggest conservatism and others that indicate optimism), the classification is made according to the dominant statements.

Table 10. Uniformity, Flexibility, Statutory Control, and Professionalism Statements by French, German, and Swiss Companies[1]

	Uniformity	*Flexibility*	*Neither*	*Total*
Statutory control	0	0	0	0
Professionalism	3	3	0	6
Neither	1	1	0	2
Total	4	4	0	8

Note: 1. Where there are conflicting statements in the comment letters (e.g., some that suggest uniformity and others that indicate flexibility), the classification is made according to the dominant statements.

Table 11. Secrecy, Transparency, Conservatism, and Optimism Statements by French, German, and Swiss Companies[1]

	Secrecy	*Transparency*	*Neither*	*Total*
Conservatism	1	0	3	4
Optimism	0	1	0	1
Neither	0	0	3	3
Total	1	1	6	8

Note: 1. Where there are conflicting statements in the comment letters (e.g., some that suggest conservatism and others that indicate optimism), the classification is made according to the dominant statements.

Anglo and Nordic Companies

The results reported in Tables 8 and 9 are consistent with **H5** for the Australian, Canadian, Netherlands, South African, U.K., and U.S. companies. Flexibility and professionalism and, to a lesser extent, optimism and transparency frequently appeared in the corporate comments of the Anglo and Nordic countries.

One British company supported mandatory and uniform IASs and is the only one recorded in the statutory control/uniformity category (Table 8). For example, this company made the following statement in support of mandatory standards: "Compliance

with IAS has to be mandatory if they are to be meaningful;" and in support of uniformity, this company stated: "an early action is to achieve greater consistency...and to eliminate more of the allowed alternatives" (p. 590). In this case, support for mandatory/uniform IASs is not too surprising because this company was formerly a state-owned nationalized industry.

The comments of only two companies predominantly supported conservative measurement practices. For example, in the context of "Recognition of past service costs, experience adjustments and effects of changes in actuarial assumptions" (IAS19, Accounting for retirement benefits in the financial statements of employers), the South African company stated (p. 574): "Prudence surely dictates that the recognition of such adjustments in current period income is not only permissible but preferable."

Germanic and More Developed Latin Companies

The results reported in Tables 10 and 11 were not so supportive of **H6** in respect of the French, German and Swiss companies. Statements in support of professionalism were clearly present in most companies, as hypothesized. However, comment letters were equally divided in support of uniformity and flexibility. It was hypothesized that uniformity would be preferred by companies in Germanic and More developed Latin countries. Perhaps the international nature of many of the companies gave their management more of a global, world viewpoint that appreciates the need for flexibility *vis-à-vis* a local viewpoint that supports uniformity in accounting matters.

Conservatism was identified in four of the eight company comment letters but secrecy was identified in only the German company's comments. In fact, one French company's comment letter included support for optimistic measurements and transparency. This result is consistent with Fechner and Kilgore's (1994, p. 273) observation that Germany is a "high" secrecy country and France is a "medium high" secrecy country. Overall, moderate support was found for the hypothesized preference for conservative measurements but little support was evident for the expected preference of secrecy in disclosure.

STATEMENTS OF ECONOMIC CONSEQUENCES IN THE E32 COMMENTS

Economic consequences were mentioned in 23 (49%) of the 47 corporate comment letters (Table 12). These company comments included statements that acknowledged the existence of economic effects for other companies and countries. Some companies mentioned more than one economic impact from E32 proposals. Examples of statements of economic consequences in the E32 comment letters are shown in Appendix C.

On the one hand, only one (12.5%) of the eight Germanic and More developed Latin companies identified economic consequences; that is, the German company mentioned the tax consequences of E32 proposals (p. 560). On the other hand, the economic impact of E32 proposals was mentioned in 22 (56.4%) of the 39 Anglo and Nordic corporate comments. Clearly, the economic consequences of IASs are important environmental influences in determining the accounting preferences of many of the

Table 12. Economic Consequences Mentioned in E32 Comment Letters

Country	*Economic effects mentioned*	*No Economic effects mentioned*	*Total*
Australia	7	5	12
Canada	5	1	6
France	—	3	3
Germany	1	0	1
Netherlands	—	1	1
Netherlands / U.K.	1	1	2
South Africa	—	1	1
Switzerland	—	4	4
U.K.	4	3	7
U.S.A.	5	5	10
Total	23	24	47

Anglo/Nordic corporate commentators (plus the German company). Perhaps, this result is consistent with the greater transparency expected from the Anglo and Nordic country groups (**H5**) *vis-à-vis* Germanic and More developed Latin countries, that are hypothesized to be more secretive (**H6**).

The economic effects of E32 proposals identified in the Anglo and Nordic comment letters included the following (numbers of companies in parenthesis):

- Taxation effects (8).
- Variability of financial results (may affect politically visible companies (MacArthur, 1993, p.185)) (5).
- Costs > benefits (4) and benefits > costs (1).
- Additional costs (3) and reduced costs (3).
- Adversely affecting borrowing costs (1).

It is interesting to note that the five variability comments came from four Canadian companies and one U.S.A. company. Perhaps Canadian and U.S.A. companies are particularly politically sensitive to possible adverse publicity from wide swings in the financial results.

SUMMARY AND CONCLUSIONS

This article investigates the influence of cultural factors on the corporate comment letters sent on the IASC's E32, *Comparability of Financial Statements*, to test Gray's (1988) hypothesized linkages between accounting values and the cultural values identified by Hofstede (1980, 1983). Taken as a whole, the content analysis results are consistent with the expectation that cultural, accounting subcultural, and economic factors affect the international accounting preferences of corporate management.

For cultural values, content analyses results were consistent with the power distance and individualism hypotheses but only partly supported the femininity-masculinity and uncertainty avoidance hypotheses. Femininity-masculinity cultural factors were not

expected to be major factors in influencing accounting subcultural values but uncertainty avoidance was hypothesized to be an important determining factor (Gray, 1988, p. 11; Fecher and Kilgore, 1994, p. 269). Therefore, lack of support for the uncertainty avoidance hypothesis is of significance. Reasons were suggested for the deviations from the hypotheses.

Additionally, the influence of corporate culture (Hofstede, 1987, p. 1) may make it difficult to identify pure national culture from corporate comment letters. This is likely to be particularly true in the case of lobbyist companies that are affiliated with MNEs that adopt a global strategy and exert centralized power over foreign subsidiaries, versus lobbyist companies that operate in a more decentralized corporate environment, affiliated with MNEs that select a multidomestic strategy.

For accounting subcultural values, strong support was found for the Anglo and Nordic companies' hypothesis but only weak support was evident for the Germanic and More developed Latin companies' hypothesis. In particular, uniformity and secrecy were less evident than expected in the comment letters from Germanic and More developed Latin companies.

Many of the corporate commentators on E32 were MNCs. It is feasible that the international concerns of at least some of these MNC companies to some extent nullified the effects of culture on their corporate comments. Hence certain results were not as hypothesized, such as flexibility preferences in the Germanic and More developed Latin companies. As an example of international aspects dominating domestic issues for MNCs, the Dutch corporate commentator stated (p. 567): "As a multinational company, we support the development of international accounting standards since they offer many advantages by comparison with sets of widely varying national standards."

The perceived economic effects of E32 proposals were also investigated. Economic consequences were mentioned in over 50% of the Anglo and Nordic corporate comment letters but in only one (12.5%) of the comment letters from the Germanic and More developed Latin group of companies.

One limitation needs to be considered in interpreting the content analysis results. Five of the seven U.K. and one of the two Dutch/U.K. companies corporate comments included responses to ten questions posed by the British Accounting Standards Committee (ASC) in its foreword to E32 (ASC, 1989, pp. 181-182). For example, the first question asked: "In principle, are you in favour of the international harmonisation of financial reporting through the reduction of options in IAS?" (p. 181). Non-U.K. countries did not have similar questions posed to them by their professional bodies to prompt corporate responses that could be analyzed in this study, although one Australian company addressed some of the ASC's questions in its comment letter (pp. 450-451). This lack of consistency may partly distort the content analysis results that include corporate responses to the ASC's questions.

The research reported in this article focused on the cultural values identified by Hofstede (1980, 1983) and the accounting subcultural values proposed by Gray (1988). Future research could study the impact of status, prestige, and other psychological and social factors on the content of comment letters. Further research could replicate this study in respect of comment letters from other organizations besides companies. For example, the comment letters submitted by auditing firms could be analyzed for culture-revealing statements. Also, future research could investigate the trend of cultural state-

ments in comment letters sent by companies on a series of exposure drafts issued by the IASC. A time-series approach could be used to study whether cultural effects on lobbying are constant or change over time.

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APPENDIX A

INDIVIDUAL COMPANIES THAT SUBMITTED COMMENT LETTERS ON E32 (COUNTRIES IN PARENTHESIS) (IASC 1990)

BOP (Australia)
Burns Philp (Australia)
Coles Myers (Australia)
CRA (Australia)
CSR Limited (Australia)
Elders IXL (Australia)
IBM (Australia)
Mayne Nickless (Australia)
Pacific Dunlop (Australia)
Pasminco (Australia)
State Electricity Commission of Victoria (Australia)
Western Mining Corporation Limited (Australia)
Alcan Aluminium (Canada)
Bell Canada (Canada)
Gulf Canada Resources
Hydro-Quebec (Canada)
Moore Corporation (Canada)
Trans Canada Pipelines
Compagnie Generale D'Electricite (France)
Lafarge Coppee (France)
Orsan (France)
BASF (Germany)
Philips' Industries (Netherlands)
Royal Dutch Shell (Netherlands and U.K.)
Unilever (Netherlands and U.K.)
South African Breweries
Cementia Holding (Switzerland)
Movenpick (Switzerland)
Patria (Switzerland)
Walter Meier Holding (Switzerland)
Allied Lyons (U.K.)
BAT (U.K.)
British Gas (U.K.)
British Petroleum (U.K.)
British Railways Board (U.K.)
ICI (U.K.)
P&O (U.K.)
American Cynamid (U.S.)
CIGNA (U.S.)
El Paso Natural Gas (U.S.)
ITT (U.S.)
Merck & Co (U.S.)
Pacific Telesis (U.S.)
Philip Morris (U.S.)
Salomon Inc (U.S.)
Texaco (U.S.)
USX Corporation (U.S.)

APPENDIX B

Examples of Accounting Subcultural Statements in the E32 Comment Letters

A. Anglo and Nordic Company Comments

The following are examples of flexibility, professionalism, optimism, and transparency statements in the Anglo and Nordic comment letters (IASC 1990):

Flexibility: One Canadian company made the following statement in support of flexible IASs (p. 539):

> ...if all things were equal it would be ideal to have all companies report under one set of accounting standards... However, we do not believe that flexibility should be sacrificed for this ideal, when circumstances justify a different treatment.

Professionalism: In respect of proposed revisions to IAS9, Recognition of development costs, an Australian company included the following sentence that supported judgement and hence the accounting subcultural value of professionalism (p. 439):

> This argument is not a relevant issue in deciding whether to eliminate a "free choice" of alternative accounting treatments, but instead eliminates valid accounting judgement in regard to the future revenue earning capacity or recoverability of the research and development costs incurred.

Optimism: In the context of proposed revisions to IAS25, Accounting for investments, a U.S. company made the following optimistic measurement statement (p. 631):

> We believe that long-term marketable equity securities should be accounted for on a portfolio basis and not on an individual asset basis....Measuring a group of securities' values on an individual basis using the cost or lower of cost or market method would be overly conservative.

Transparency: In respect of proposed revisions to IAS16, Accounting for property, plant and equipment, a U.S. company made the following statement in support of transparency (p. 613):

> We do not object to the preferred treatment if appropriate disclosure properly informs the financial statement user of the nature of such income.

B. Germanic and More Developed Latin Company Comments

The following are examples of uniformity, professionalism, conservative, and secrecy statements in Germanic and More developed Latin companies:

Uniformity: In respect of proposed changes to IAS21, Accounting for the effects of changes in foreign exchange rates, one French company stated (p. 545):

> As a consequence, it is suggested to eliminate the allowed alternative treatment.

Professionalism: A Swiss company made the following statement that supports the

self-regulation of international accounting standards by a private, professional body (p. 580):

> We appreciate the efforts the International Accounting Standards Committee has undertaken to harmonise the international standards of accounting.

Conservative: In respect of proposed revisions to IAS9, Accounting for research and development activities, the German company comments included the following statements that support conservative measurement (and uniformity) (p. 556):

> The non-capitalization of research and development costs, including self-created intangible assets, is based on the principle of conservatism of German accounting policies....The IASC preferred treatment should therefore—much more so than is currently being done—generally disqualify a capitalization, without permitting it to be allowed as an alternative method.

Secrecy: In the context of IAS16, Accounting for property, plant and equipment, the German corporate commentator stated (p. 558):

> A continuation of these so-called "hidden" reserves should be possible as was done before for balance sheet purposes.

APPENDIX C

Examples of Statements of Economic Consequences in the E32 Comments

Taxation (German company) (560):

(In the context of IAS19, Accounting for retirement benefits in the financial statements of employers, proposals in E32.)

> The corresponding accounting treatment for balance sheet and tax purposes would lead to tax disadvantages due to disapproval of recovery…

Volatility (Canadian company) (500):

(In the context of IAS21, Accounting for the effects of changes in foreign exchange rates, proposals in E32.)

> The proposed amendment would create volatility in earnings of many Canadian corporations. This is unnecessary and undesirable...Reporting this type of volatility in earnings does not serve any useful purpose and would indeed be confusing and misleading to the readers of financial statements.

Costs > benefits for proposed changes in E32 (570):

> …it is important that the hallmark of compliance with IAS should not be denied to companies merely because they have failed to provide a reconciliation which may be costly and adds little to understanding...for companies following the allowed alternative the reconciliation would impose a considerable extra burden of reporting with little or no benefit to the audience.

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Financial Reporting Regulation in ASEAN: Features and Prospects

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Key words: ASEAN; financial reporting regulation; comparative international accounting; accounting harmonization

Abstract: *This paper analyses similarities and differences in the financial reporting regulation practices of the six countries comprising the Association of South East Asian Nations (ASEAN). Similarities are observed in the objectives of financial reporting regulation and in the participation of the private sector in accounting standards setting and enforcement. Differences are discerned in each country's companies law requirements, securities market regulations, accounting standards-setting procedures and accounting standards content. Factors influencing regulatory approaches are discussed. They include previous colonial linkages, official efforts to develop a securities market, and the effects of increasing economic integration in ASEAN. An increased understanding emerges of the forces shaping the past and future development of financial reporting in ASEAN.*

The Association of South East Asian Nations (ASEAN) is a regional political and economic grouping made up of Brunei, Indonesia, Malaysia, the Philippines, Singapore and Thailand.[1] The six countries comprising ASEAN have attracted much interest in recent years because their notable economic growth has been achieved within a context of close regional co-operation (Timberman, 1992; Hewison, Robison and Rodan, 1993; World Bank, 1993). Economic ties between ASEAN countries seem destined to become stronger with ASEAN's commitment to create an ASEAN Free Trade Area (AFTA) by 2003.[2] Although united diplomatically through membership in ASEAN, the six countries evidence a remarkable socio-economic, political and cultural diversity. The diversity within the group extends into the realm of financial reporting, for ASEAN countries have adopted different approaches to regulating financial reporting (Zimmerman, 1987; Ninsuvannakul, 1988).

This paper aims to increase understanding of financial reporting regulation in ASEAN by analyzing the national contexts which influence financial reporting regulation in these countries. Attention is drawn to existing commonalities and differences in financial report-

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ing and to pressures for convergence in the financial reporting of the six countries. Factors encouraging the harmonization of financial reporting arise endogenously as the pace of intra-regional economic exchange in ASEAN increases; and exogenously, as the economies of the six countries are integrated more closely into the global economy through trade and investment activities. Some policy implications which emerge from analysis of regulatory approaches adopted within the group are also discussed .

This study of financial reporting regulation in ASEAN should interest policy makers in other developing countries. Those considering what should be the appropriate approach to adopt in financial reporting regulation should be able to draw insights from the experiences of these countries. Moreover, our reflections upon the prospects for, and the impediments to, eventual harmonization within ASEAN are likely to be useful and timely, for although the group is still relatively young, interest in regional accounting harmonization is strong. Choi, as early as 1979, identified accounting harmonization as a key issue affecting financial reporting in ASEAN. More recently, the ASEAN Federation of Accountants (AFA)[3] has devoted much attention to debates over accounting harmonization (Roh, 1991; Cruz, 1993). These debates are expected to increase as the pace of intra-regional economic exchange in ASEAN accelerates. Data and insights relevant to the group's harmonization debates are provided here.

We begin by providing a general classificatory framework to facilitate analysis. Aspects of ASEAN's financial reporting regulation are compared and contrasted with those of non-ASEAN countries. Similarities and differences in the regulatory regimes of the six countries are analyzed. Other issues addressed include the differences in the detail of accounting standards, the roles played by government agencies and private sector bodies, the mechanisms for enforcing voluntary financial reporting rules, the impact of regulatory lapses on financial reporting, and the general prospects for accounting harmonization within ASEAN.

BASIS FOR CLASSIFICATION

To assist in clarifying approaches to financial reporting regulation, three sources of financial reporting regulation are identified: (1) financial reporting-related legislation, found in companies laws, securities laws and tax statutes; (2) official directives and guidelines issued by government agencies such as companies law administrators, securities market regulators and tax authorities; and (3) rules and guidelines issued by private sector organizations such as professional accountancy bodies and stock exchanges.

Using approaches which are both statistical (Da Costa, Bourgeois and Lawson, 1978; Frank, 1978; Nair and Frank, 1980) and non-statistical (American Accounting Association, 1977; Nobes, 1984), studies have classified countries according to their local accounting rules and practices. We draw principally upon Mueller (1967, 1968), Nobes (1984), and Nobes and Parker (1991) to distinguish between *macroeconomic* and *microeconomic* patterns of financial reporting regulation in order to establish the basic pattern adopted by ASEAN countries. Table 1 presents the main characteristics of each approach.

Differences in the perceived objective for regulating financial reporting underlie these two patterns. Under a *macroeconomic* approach, the needs of government users are paramount. Financial reporting regulation emphasizes the use of financial reports for national economic planning purposes (e.g., determining levels of tariff protection for an industry)

Table 1. Patterns of Financial Reporting Regulation

Factor	*Macroeconomic Approach*	*Microeconomic Approach*
1. Tax	Harmony between tax rules and financial accounting rules	No requirement for tax rules and financial accounting rules
2. Conservatism	Heavy conservatism in profit and assest values; use of arbitrary charges and accounting reserves	Prudence tempered by 'fair view'; arbitrary accounting reserves are not allowed
3. Objective	Correct and lawful	True and fair
4. Accounting plan	Often used	Not used
5. Source of accounting regulation	Mainly government	Both government and private sector
6. Exemplars	Germany, France, Japan, Sweden	U.K., U.S.A., Australia, Canada, the Netherlands

Source: Christopher W. Nobes, *International Classification of Financial Reporting*, (1984, p. 69.)

or for highlighting the impact of government economic policies (e.g., industry tax allowances) on the financial performance of firms. To satisfy macroeconomic planning goals, national accounting plans similar to France's *Plan Comptable General* are used to aggregate firm-level data generated by uniform accounting procedures.[4] Companies are often required to use the same accounting procedures for financial reporting and tax purposes, as is the case in Germany, Sweden and Japan.[5]

In contrast, a *microeconomic* approach focuses on the use of financial reports for making decisions concerning an individual enterprise, rather than for decisions regarding an industry or national economy. The main users of financial reports are perceived to be creditors and shareholders and a principal requirement is that a company's state of affairs and results of operations be presented fairly.[6] Considerable flexibility is allowed to company management in selecting accounting policies on the assumption that circumstances of individual firms may vary, even within the same industry, and that a unique mix of accounting policies is required to reliably portray a firm's financial circumstances. The regulatory approaches of the U.K., U.S.A., Australia and Canada exemplify the microeconomic pattern.

SIMILARITIES IN ASEAN FINANCIAL REPORTING

The overall approach to financial reporting regulation of all six ASEAN countries should be regarded as microeconomic in nature. Two related dimensions underlie this conclusion. First, the principal objective of financial reporting, as enunciated in the companies legislation and accounting standards of ASEAN countries, is to provide financial information for making decisions at the individual company level. Moreover, professional accountancy bodies and stock exchanges in each country participate actively in setting and enforcing financial reporting rules.

Objectives of Financial Reporting Regulation

A shared characteristic in ASEAN is that the legislative framework for financial reporting regulation is provided principally by each country's companies laws and securities

Table 2. Companies Law and Securities Legislation in ASEAN

Country	*Companies Law*	*Securities Law*
Brunei	Companies Act, 1984	N.A. (No securities market)
Indonesia	Commercial Code, 1848	Presidential Decree No. 52, 1976 re: Capital Market
Malaysia	Companies Act, 1965 (as amended)	Securities Industries Act, 1983 (as amended)
Philippines	Corporation Code, 1980 (National Law No. 68)	Revised Securities Act, 1992
Singapore	Companies Act, 1967 (as amended)	Securities Industries Act, (Cap 289) (as amended)
Thailand	Civil and Commercial Code, 1929	Securities and Exchange Act B.E. 2535 (1992) Public Limited Company Act B.E. 2535 (1992)

laws, but not by tax statutes. Table 2 presents the main companies laws and securities legislation influencing the financial reporting of ASEAN countries.

Tax legislation in ASEAN has not affected financial reporting directly. There is no requirement that tax reporting procedures be followed for financial reporting purposes, unlike in Germany, France, and Japan.[7] In contrast, companies laws and securities laws in ASEAN directly address financial reporting for private companies. In the case of companies laws, the requirements generally specify that

> Every company ... shall cause to be kept such accounting and other records as will sufficiently explain the transactions and the financial position of the company and enable true and fair profit and loss accounts and balance sheets ... to be prepared. (Singapore *Companies Act, 1967*, as amended, sec. 167; equivalent sections in *Malaysia Companies Act, 1965*, as amended and *Brunei Companies Act, 1984*, as amended).

Securities laws regulate financial reporting of those companies who have issued their own securities, or intend to offer them to the public. They also regulate those who purchase or sell company securities (e.g., stock brokers). The focus of companies laws and securities laws is to ensure that companies provide sufficient financial information to satisfy the needs of various users, particularly those providing capital (i.e., creditors and investors). In no case do companies laws or securities laws in ASEAN specify that financial reports be used to provide government with information for macroeconomic planning purposes. Each ASEAN country has a national economic policy planning agency which relies upon broad *macro*economic measurements for analyzing economic policy.[8] These agencies, however, do not rely on aggregated *micro*economic (financial accounting-based) data supplied by individual enterprises.

The goals of accounting standards determined by professional accounting bodies within ASEAN are consistent with the general aims of companies and securities laws inasmuch as they emphasize the important input financial statements provide in economic decision-making.[9] The accounting standards focus principally, either implicitly or explicitly, on satisfying the perceived interests of shareholders and creditors. In Malaysia and Singapore, the "true and fair view" required in respective *Companies Acts* is achieved by presenting financial statements that meet the needs of investors.[10] The accounting standards of Indo-

nesia, the Philippines, and Thailand also mention investors and creditors as important users of financial statements.[11]

Several qualitative objectives also are mentioned commonly in accounting standards of ASEAN countries: *relevance, understandability, neutrality*, and *comparability*.[12] *Representational faithfulness* is considered an important objective in Malaysia, the Philippines and Singapore. All ASEAN countries consider *economic substance* of a transaction to be more important than its legal basis, in contrast to the emphasis on legal correctness in Germany, France, and Spain.[13] Accounting standards in ASEAN countries emphasize that ultimate responsibility for determining appropriate accounting policies rests with enterprise management. For example, in Thailand:

> The accounting policies of a reporting entity are the specific accounting principles and the methods for applying those principles that are **judged by management** of the entity to be the most appropriate in the circumstances to present fairly the financial position, changes in financial position, and results of operations in accordance with generally accepted accounting principles. (*Thailand Financial Accounting Standard No. 2, par. 4*, emphasis added).

In summary, companies laws, securities laws and accounting standards determined by professional accounting bodies consistently emphasize the use of financial reports for making decisions at the level of the firm. They do not dwell on the potential usefulness of these reports for a government's macroeconomic planning objectives.

Regulation by the Government and the Private Sector

Another common regulatory characteristic is the active participation of private sector organizations, particularly professional accounting bodies and stock exchanges, in formulating and enforcing accounting regulations in ASEAN. This approach to financial reporting regulation differs significantly from the more *dirigiste* approach observed in Germany, France, and Japan where the government, and not the private sector, determines the detailed rules relating to company financial reporting.[14] Table 3 summarizes the government agencies and private sector bodies involved in regulating financial reporting within ASEAN.

Except for the Philippines, companies laws and securities laws in ASEAN are administered by separately designated government agencies. In practice, however, government agencies in ASEAN recognize and encourage private sector participation in attaining legislative aims (Timberman, 1992; Hewison, Robison and Rodan, 1993). Private sector organizations, particularly professional accounting bodies and stock exchanges, therefore play a prominent role in setting and enforcing financial reporting requirements related to companies laws and securities laws.[15]

Each of the professional accounting bodies in ASEAN has formulated detailed accounting standards applicable to private sector companies whose financial statements are required to be audited.[16] Government licensed (or certified) auditors are responsible also for ensuring that company financial statements comply with companies laws, securities laws and other regulations (e.g., tax laws).[17] Stock exchanges have promulgated stock listing and other requirements applicable to companies whose securities are

Table 3. Financial Reporting Regulatory Agencies in ASEAN

Country	*Government Agencies*	*Private Sector Bodies*
Brunei	1. Registrar of Companies 2. Not applicable 3. Ministry of Finance	1. Brunei Institute of Certified Public Accountants 2. None
Indonesia	1. Foreign Investment Coordinating Board (BKPM) 2. Capital Market Supervisory Agency (Bapepam) 3. Ministry of Finance	1. Ikatan Akuntan Indonesia (Institute of Indonesian Accountants) 2. Jakarta Stock Exchange; Surabaya Stock Exchange
Malaysia	1. Registrar of Companies 2. Securities Commission 3. Malaysian Institute of Accountants	1. Malaysian Association of Certified Public Accountants 2. Kuala Lumpur Stock Exchange
Philippines	1. Securities Exchange Commission 2. Securities and Exchange Commission 3. Professional Regulation Commission-Board of Accountancy	1. Accounting Standards Council; Philippine Institute of Certified Public Accountants 2. Philippine Stock Exchange
Singapore	1. Registrar of Companies and businesses 2. Monetary Authority of Singapore 3. Public Accountants Board	1. Institutes of Certified Public Accountants of Singapore 2. Stock Exchange of Singapore
Thailand	1. Ministry of Commerce 2. Securities an Exchange Commission 3. Ministry of Commerce	1. Institutes of Certified Accountants and Auditors of Thailand 2. Securities Exchange of Thailand

Notes: Government agencies: 1. Companies law administrator; 2. Securities market regulator 3. Accounting licensing agency
Private sector bodies: 1. Professional accounting body 2. Private stock exchange

traded in the exchange.[18] These stock exchanges generally rely upon auditors to ensure compliance with their required financial disclosures.

DIFFERENCES IN ASEAN FINANCIAL REPORTING

While a microeconomic approach to financial reporting regulation is observed generally within ASEAN, there are significant variations between member countries. Several clusters of ASEAN countries are identified. These clusters arise from the extent of the influence of each country's companies law requirements, securities market regulations, and accounting standards on financial reporting regulation.

Companies Law Requirements

Analysis of national companies laws within ASEAN reveals four patterns of development:[19]

- A British approach (adopted by Brunei, Malaysia and Singapore)

- A Dutch approach (adopted by Indonesia)
- A U.S. approach (adopted by the Philippines)
- A Mixed-country approach (adopted by Thailand).

Brunei, Malaysia, and Singapore, all former British colonies, have each adopted a *Companies Act* modelled on the U.K. *Companies Act 1948* and the Australian *Uniform Companies Act 1961* (Pillai, 1984; Price Waterhouse, 1991, 1992a, 1992b). Although the *Companies Acts* of Brunei, Malaysia, and Singapore have undergone considerable changes since first enacted in 1984, 1965, and 1967, respectively, there has been no fundamental change in their underlying general requirements (CCH, 1990). Each of these Acts sets formidable objectives. They each require the keeping of accounting records which explain a company's financial position sufficiently and accurately. Such accounting records must enable true and fair financial statements to be prepared and allow them to be audited. The Acts also require a balance sheet, a profit and loss account, and a statement of changes in financial position, consolidated where necessary, to be prepared on a regular basis in accordance with fairly detailed disclosure requirements prescribed in a *Ninth Schedule* (Pillai, 1984; CCH, 1990).

The Indonesian *Commercial Code 1848*, patterned on the early Dutch Commercial Code (*Wetboek van Koophandel*), specifies that any person carrying on a business activity must keep records sufficient to allow determination of that person's rights (presumably assets) and obligations (liabilities) (Samidjo, 1985). However, the Indonesian code does not specify how this is to be accomplished. Although each Indonesian business is required to prepare a balance sheet within six months of the fiscal year end, there is no statutory requirement to file that balance sheet or have it audited (Reksoatmodjo and Co., 1989). In practice, most Indonesian firms prepare financial statements to satisfy requirements of regulatory agencies (such as the BKPM or 'Foreign Investment Board') and creditors (Price Waterhouse, 1993).

The Philippine *Corporation Code* of 1980 (*Batas Pambansa Blg. 68, sec. 74* and *141*) requires corporations to maintain records of all business transactions, records of shareholders' and directors' meetings, stock and transfer books (for stock corporations) and requires them to submit annual audited financial statements to shareholders and to the Securities and Exchange Commission (the government agency administering the *Corporation Code*). The non-specific nature of provisions in the *Corporation Code* strongly reflects the broad financial reporting provisions of the Philippines' *Corporation Law* (Act No. 1459) of 1906 which was promulgated by the Philippine legislature when it was under U.S. colonial administration (PICPA, 1967; De Leon, 1990).

Thailand's *Civil and Commercial Code, Book III* (1914 as amended in 1929) stipulates that "true accounts" must be maintained of the "sum received and expended by the company for each receipt and expenditure" and of "the assets and liabilities of the company (ICAAT, 1973, p. 153). The use of the British notion of "true accounts" in the Thai Code reflected the influence of the U.K. *Companies Consolidations Act 1908* (Maolanond and Yasuda, 1985). The Code drew upon elements of Japanese and German code law to a lesser extent. For example, the Thai Code provides for the appointment of a statutory auditor, who may be a shareholder of the company, similar to that required under original Japanese and German commercial legislation (ICAAT, 1973).

The content of companies laws in the British group (Brunei, Malaysia, and Singapore) has a pattern that distinguishes it from the non-British group (Indonesia, the Philippines, Thailand). Apart from enshrining the notion of "true and fair" financial reporting, companies laws in the British group provide comprehensive disclosure requirements. In contrast, financial reporting provisions in the companies laws of the non-British group are less detailed, inasmuch as they specify only that certain accounting records be kept. Companies laws therefore appear to have had a more significant impact on the development of financial reporting in the ASEAN countries comprising the British group. However, companies laws in the non-British ASEAN group have also facilitated the development of financial reporting by specifying the need to prepare financial reports and by enshrining flexibility for government agencies and private sector bodies to subsequently provide details of the reporting regulation to be adopted. The accountancy profession in Indonesia, the Philippines and Thailand has contributed significantly to specification of the detailed rules necessary to satisfy the financial reporting provisions of their countries' respective companies laws.

Companies laws in ASEAN are affected strongly by each country's former colonial links. Companies laws in Brunei, Indonesia, Malaysia, the Philippines and Singapore were initiated by colonial administrators and the legislative and administrative framework they provided has survived the upheavals of national political independence.[20] Thailand, which was never colonized, is an exceptional case. Unlike other ASEAN countries, no exogenous legal system was imposed upon Thailand. Instead, Thailand modelled its commercial laws upon selected Eastern and Western legal systems, including those of Britain, Japan and Germany, reflecting its important trading links with these major economic powers during the late 1800s and early 1900s (Maolanond and Yasuda, 1985; Yasuda, 1993).

Securities Laws and Regulations

Modern securities laws are fairly recent features of financial reporting regulation in ASEAN. They have been enacted generally since the 1970s, when ASEAN's securities markets began to grow rapidly (Ng, 1989). Brunei is the only ASEAN country not to have an organized securities exchange.

The pattern of securities market regulation within ASEAN is not as clearcut as the pattern observed with companies laws. The scope and content of original securities laws provide some evidence to support a dichotomization into a British group (Malaysia and Singapore) and a non-British group (Indonesia, the Philippines, and Thailand), consistent with that observed with companies laws. However, recent regulatory reforms in each country indicate a shift towards a U.S.-style regulatory framework, particularly for Indonesia, Malaysia, the Philippines and Thailand.

ASEAN securities laws (Table 2) are similar in that their common aim is to protect investors from unscrupulousness in securities markets. However, the laws differ in the emphasis given to the need for adequate disclosure in financial statements in order to safeguard the interests of investors. The *Securities Industry Acts* of Malaysia and Singapore (British group) focus narrowly on stockbroking businesses (Pillai, 1984; Edwards, 1987), whereas the securities laws of Indonesia, the Philippines, and Thailand (non-British group) include stockbrokers and companies issuing securities (*Bapepam*, 1986; Republic of the Philippines, 1982; Kingdom of Thailand, 1993a, 1993b). This difference in approach

seems likely to have arisen because extensive financial reporting requirements are contained already in the companies laws of Malaysia and Singapore, thereby making it unnecessary to duplicate disclosure provisions in securities laws. By according additional emphasis to adequate financial reporting by public companies, the securities laws of Indonesia, the Philippines, and Thailand play an important role in the development of their financial reporting systems.

The securities regulation environments in ASEAN are dynamic. Reforms during the 1980s in Indonesia and the Philippines and during the 1990s in Malaysia and Thailand have led to a convergence in the regulatory styles of these four countries (*Bapepam*, 1986; Chaturongkol, 1992; Sharif, 1993; Abdoelkadir and Yunus, 1994). Currently, Indonesia, Malaysia, the Philippines, and Thailand each has a separate government agency with powers and functions similar to the US Securities and Exchange Commission.[21] This development has had a significant impact on financial reporting regulation in Indonesia and the Philippines. Indonesia's Capital Market Supervisory Agency (*Bapepam*) and the Philippines' Securities and Exchange Commission have each issued sets of rules concerning the form and content of financial statements.[22] Both agencies have become more influential in financial reporting matters, particularly since the law vests them with authority to determine accounting rules and standards.[23] The recently established securities agencies in Thailand (1992) and Malaysia (1993) are therefore expected to play an important role in the development of national financial reporting.

Singapore alone has opted for a centralized approach to securities market regulation. Responsibility for supervising both the securities and non-securities markets is assigned to a politically powerful agency, the Monetary Authority of Singapore (MAS), which is also the country's *de facto* central bank. Singaporean authorities envision that a more co-ordinated approach to regulation will boost the country's bid to become the premier financial center in Southeast Asia (a position it is contesting with Hong Kong) (Edwards, 1986). Unlike securities regulators in Indonesia, Malaysia, the Philippines, and Thailand, however, the MAS does not participate actively in setting accounting standards, except for those applying to banks and other financial institutions (Price Waterhouse, 1993). The task of specifying accounting standards has been reserved for the Institute of Certified Public Accountants in Singapore.

Accounting Standards Setting Mechanisms

Professional accounting bodies play an important role in determining accounting standards in all ASEAN countries other than Brunei. Standards setting mechanisms, however, differ among the six countries. Accounting standards setting is at a germinal stage in Brunei, which has yet to formulate any mechanism for developing local accounting standards (Foo, 1993). Nonetheless, the Brunei Institute of Certified Public Accountants, which was formed in 1984, is expected to play an increasingly prominent role in developing accounting standards.

In Indonesia, Malaysia, Singapore, and Thailand, accounting standards are determined by professional accounting bodies in consultation with government agencies and other private sector bodies. Accounting standards are approved by the executive councils or board of directors of the accounting bodies. The role of outside parties, such as government agencies and other private sector groups, generally is limited to commenting on an "exposure

draft" of the proposed accounting standard. In Indonesia and Malaysia, however, government agencies and private sector groups are involved also in drafting some standards. For example, the preparation of general accounting standards in Indonesia was supported by the Indonesian Central Bank (*Ikatan Akuntan Indonesia*, 1989) and in Malaysia, the preparation of the Accounting Standards for the Insurance Industry involved the Directorate-General for Insurance and representatives from the Malaysian insurance industry (MACPA, 1993b). Once approved by the national council or board of directors, the accounting standards become obligatory for members of the professional accounting body.

In contrast, the Philippines has moved towards broader representation and involvement of interested parties in the accounting standards-setting process, prompted by a desire for greater acceptability and enforceability of accounting standards (Alindada, 1982; Banaria, 1983). The Accounting Standards Council (ASC), a joint public sector and private sector body, rather than the national professional accounting body, promulgates accounting standards (ASC, 1988). The ASC consists of four representatives from the Philippine Institute of Certified Public Accountants, and one member each from the Board of Accountancy (a statutory board under the Professional Regulation Commission, the umbrella government agency which regulates government-recognized professions), the Securities and Exchange Commission, the Central Bank, and the Financial Executives Institute (the latter represents the preparers of financial statements).[24] Accounting standards set by the ASC are enforceable against licensed accountants only, although the scope for compliance has been expanded to include independent auditors and auditors employed by companies.[25] Legal sanctions for violation of accounting standards include suspension or revocation of the license to practice accountancy. To date, apart from minor reprimands, no accountant has been suspended or delisted for violating ASC accounting standards.

Nature of Accounting Rules

The principal sources of accounting standards in ASEAN countries differ. With few exceptions, Malaysian and Singaporean accounting standards are based on accounting pronouncements of the International Accounting Standards Committee (IASC) (Haoching, 1982; MACPA, 1993b; MIA, 1993; ICPAS, 1977-1994).[26] Thailand's accounting standards are drawn from a hybrid of IASC and U.S. accounting standards (ICAAT, 1993). Of the 24 pronouncements of the Institute of Certified Accountants and Auditors of Thailand, 14 are based on IASC pronouncements.[27] The remaining ten accounting standards have been developed locally but draw upon U.S. FASB and AICPA pronouncements (ASC, 1988).[28] The accounting methods and concepts in the standards formulated by the Philippines' ASC, with few exceptions, are based upon U.S. FASB pronouncements. Indonesian accounting standards also draw heavily upon U.S. sources, albeit from somewhat dated material issued by AICPA (*Ikatan Akuntan Indonesia, 1989*).[29] Indonesian accounting standards are not as detailed as standards in other ASEAN countries (Price Waterhouse, 1993). The Brunei Institute of Certified Public Accountants has yet to formulate national accounting standards. This is understandable as Brunei did not attain status as an independent body until 1984. It is expected that Brunei will emulate Malaysia and Singapore and adopt IASC standards (World Accounting Report, 1990; Foo, 1993).

Because ASEAN countries have borrowed heavily from IASC and U.S. standards does not mean a total absence of locally-developed standards. Whenever required, most

ASEAN countries have formulated accounting standards to suit local circumstances. For example, Malaysia has promulgated standards pertaining to business combinations, the insurance industry, and aquaculture.[30] The Philippines' ASC has enacted standards pertaining to the revaluation of fixed assets and to the banking industry.[31] Singapore has issued a host of technical bulletins and guidance notes which interpret the accounting standards in the context of local business requirements.[32]

DISCUSSION AND POLICY IMPLICATIONS

The Need for Legislative Support

The companies laws and securities laws in each ASEAN country have been instrumental in the development of financial reporting in ASEAN. These laws specify the responsibility of companies to provide regular financial reports and establish the legal authority of the government agencies responsible for enforcement. Developing countries, in specifying financial reporting requirements, must decide whether a macroeconomic approach or microeconomic approach should be adopted. Previous colonial links, which were shown to be closely associated with the choice of companies laws in ASEAN countries, should also be an influential factor in other developing countries (Wallace, 1993). Other developing countries should decide also, in the context of their circumstances, whether government's needs for uniform financial reporting outweighs the flexibility requirements of individual business enterprises. ASEAN countries have adopted a microeconomic approach to financial reporting regulation, not only because of their colonial links, but because this is perceived to be most consistent with the regulatory approach of their governments. Countries such as Germany, France, and Japan have adopted a macroeconomic approach to financial reporting regulation because they believe in stronger and more visible government participation in economic affairs. In contrast ASEAN countries generally rely on private sector-led economic development (Timberman, 1992; Hewison et al., 1993).

It is insufficient that companies laws and securities laws merely specify financial reporting requirements of companies. Government agencies must also be given explicit authority to enforce legislation by formulating detailed administrative guidelines. For example. the Registrars of Companies in Brunei, Malaysia, and Singapore are empowered under companies laws to prescribe rules indicating how companies should file their annual reports (CCH, 1990; Price Waterhouse, 1991). Unless this authority is specified clearly under the law and unless the responsible government agency takes the necessary steps to ensure compliance, it would be difficult to improve the quality of national financial reporting.

Necessary Conditions for Active Private Sector Participation

ASEAN's experience reveals two prerequisites for the active participation of professional accounting bodies and stock exchanges in setting and enforcing financial reporting regulations. First, a government's overall policy with respect to regulating financial reporting should encourage entrepreneurial initiative within the private sector by allowing a significant degree of flexibility in companies' financial reporting practices. ASEAN governments have refrained from imposing uniform accounting standards. Instead, companies are allowed to

select their own accounting policies, subject to the reporting rules specified in legislation, administrative pronouncements and accounting standards developed by private sector bodies. Generally, the responsibility for developing detailed financial reporting standards has also been delegated by government agencies to professional accounting bodies and stock exchanges.

The second prerequisite is that there must be well-organized private sector bodies capable of formulating and implementing financial reporting rules. Without these private sector bodies, governments are unable to delegate effective responsibility for standards-setting. For example, within each ASEAN country a sizeable and legislatively recognized corps of accounting professionals existed prior to each country's political independence (the Philippines) or shortly thereafter (Brunei, Indonesia, Malaysia, and Singapore).[33] The high status enjoyed by members of the accounting profession allows professional accounting bodies in ASEAN to assume responsibility for developing appropriate accounting standards for private sector companies.

"Voluntary" Corporate Compliance with Financial Reporting Rules

An obligation to comply with accounting standards is imposed directly upon members of the professional bodies only—it is not imposed on the companies preparing financial statements. However, despite any official obligation for companies to comply with accounting standards, most usually do so, for one or more of three principal reasons.

First, the enterprises are required by companies law or other relevant statutes to submit to an external audit conducted by a government-approved auditor and compliance with accounting standards will be more likely to lead to an unqualified audit report. In Brunei, Malaysia, the Philippines, Singapore, and Thailand, almost all registered companies must submit annual audited financial statements.[34] In Indonesia, foreign joint venture companies and some domestic companies must undergo an annual audit.[35] In the Phillipines, tax regulations may also require companies whose turnover exceeds Pesos 25,000 (about US$1,000) in any given financial quarter to undergo an external audit (*National Internal Revenue Code, 1988*).

Second, those companies which fail to comply with financial accounting standards are often subjected to greater scrutiny by government agencies. This is particularly the case for government agencies administering the securities laws, such as Indonesia's Capital Market Supervisory Agency (*Bapepam*) and Malaysia's Securities Commission. To raise funds through a public issue, the approval of such agencies is usually contingent, among other conditions, on the provision of an auditor's unqualified report.

Third, many private external users of financial information, such as banks and stock exchanges, require audited financial statements. An audit qualification is often likely to have unfavorable repercussions. For example, the listing rules of all ASEAN stock exchanges require a company to submit audited financial statements, usually for the preceding two or more years. A qualified report might be grounds for disapproving the listing application.

Impact of Regulatory Shortcomings

The pressures on companies to comply with accounting standards have not ensured proper financial reporting in all cases. Recent experiences in several ASEAN countries

have raised concerns as to the adequacy of enforcement mechanisms. A much publicized financial disaster in Malaysia and Singapore in 1985 involving the bankruptcy of a listed company, Pan-Electric Industries, highlighted weaknesses in the financial reporting function (Rowley, 1987). Investors were unaware of the extent of the undisclosed liabilities of the company. [36] When this became known, a stock market crash ensued, resulting in the unprecedented closure of both the Kuala Lumpur and the Singapore stock exchanges for three days. A similar case occurred in Thailand in 1979 when auditors were found to have given false reports to shareholders of the accounts of Rajah Finance Company, one of the most frequently traded stocks on the Stock Exchange of Thailand (SET). The company's bankruptcy precipitated a stock market crash in which the SET Index lost approximately 115% in one year (Rowley, 1987). There have been incidents in Indonesia and the Philippines involving massive loans made by financial institutions to politically well-connected individuals which have been inappropriately disclosed and improperly valued in the financial statements, undermining public confidence in accounting reports (Lichauco, 1993; EBRI, 1994).[37]

Incidents such as these have prompted authorities to further strengthen regulatory supervision by enacting new laws and administrative guidelines (Edwards, 1987; Asian Development Bank, 1992; Euromoney, 1993; IMF, 1994). The ASEAN experience indicates that the enforcement of financial reporting rules enacted by professional accounting bodies and stock exchanges could be enhanced in at least two ways. First, such standards should be endorsed by government, thereby making them mandatory for all government-approved or government-certified accountants and auditors. In Indonesia, Malaysia, Singapore, and Thailand, accounting standards issued by national accounting bodies are more widely enforceable, as membership in the national professional body is a prerequisite to obtaining a government license to practice accountancy. In the Philippines, accounting standards issued by the ASC and approved by the government's Professional Regulation Commission/Board of Accountancy are legally enforceable on all licensed accountants.

Another measure is that professional accountancy bodies and stock exchanges should involve themselves in monitoring the compliance of their members to designated rules. Malaysian and Singaporean professional accounting bodies have each organized a Financial Statements Review Committee to monitor whether company accounts are prepared in accordance with accounting standards (MACPA, 1988; ICPAS, 1994). Violations are brought to the attention of both the company management and the auditor, with a warning sent to the auditor. Finally, the stock exchanges in Indonesia, Malaysia, Philippines, Singapore, and Thailand have each established a surveillance unit to monitor whether listed companies properly disclose all material information in accordance with securities laws and stock exchange requirements (Euromoney, 1993).[38]

Accounting Harmonization in ASEAN

The ASEAN Federation of Accountants (AFA) is debating the possibility of harmonizing accounting standards within ASEAN (Alindada and Casiño, 1978; Choi, 1979; Ninsuvannakul, 1988; Cruz, 1993). The analysis here raises fundamental issues with which policy-makers, including professional accountancy bodies and government regulators, must contend. Differences in institutional makeup, including companies laws and securities legislation, as well as accounting standards-setting mechanisms, may pose daunting

barriers to accounting harmonization in the short term. For example, policy makers must grapple with the more onerous disclosure requirements in the companies laws of Brunei, Malaysia, Singapore, and Thailand. The absence of a securities market in Brunei provide potential for further dilemma in regard to the general applicability of accounting rules over public companies.[39]

However, substantive harmonization of accounting regulation is not improbable. Already, Malaysia, Singapore, and Thailand base their accounting standards, in whole or in part, on IASC accounting standards. Brunei is likely to adopt IASC standards (Foo, 1993). In 1994, Indonesia's Capital Market Supervisory Agency (*Bapepam*) has recommended the use of IASC standards by publicly-listed Indonesian companies.[40] Currently, the Philippines is the only ASEAN country not to attempt to harmonize its local standards with the IASC standards. It is conceivable, however, that if the rest of ASEAN adopts IASC accounting standards, the Philippines might be pressured to conform to, or at least recognize, IASC standards for domestic reporting purposes as well. Overall, the possibility of accounting harmonization in ASEAN depends greatly on whether regulators and professional accountancy bodies in each country can be persuaded to rely more extensively upon IASC standards.[41]

SUMMARY AND CONCLUSIONS

ASEAN countries can be clustered or grouped according to their companies law requirements, securities market regulation, accounting standards setting mechanisms, or the content of their accounting standards. In terms of its overall objectives and institutional structure, financial reporting regulation within ASEAN clearly falls under the *microeconomic* pattern defined here. Considerable emphasis is devoted to decision-making at the level of the individual enterprise as opposed to using financial reports for *macroeconomic* planning purposes. The similarities among ASEAN countries augur well for the possibility if eventually harmonizing accounting standards within ASEAN. However, several impediments to harmonization which need to be addressed include differences in companies laws and securities laws, and the constitutional diversity of standards-setting bodies.

The differences in ASEAN's financial reporting regulation are explained by a combination of socio-historical, economic, and political factors unique to each country. Companies laws, for example, are influenced strongly by previous colonial linkages. Securities market regulations are of more recent origin with each country striving to develop its corporate securities market based on regulatory models it deems most appropriate. With some modifications, ASEAN countries other than Brunei and Singapore have opted for U.S.-style regulation of their securities markets. The worldwide pre-eminence of the U.S. securities markets has probably been the crucial factor for this choice. Nonetheless, the accounting standards-setting approach of ASEAN countries (including those which have adopted a U.K.-style companies law or a U.S.-style securities regulation) differs from both the U.S. and U.K. approach. Except in the Philippines, the accounting profession is the sole authority that approves and enforces the accounting standards. The origin of accounting standards raises important issues regarding compliance by companies. That financial reporting in ASEAN has so far been moderately successful is due largely to co-operation between governments and the private sector. ASEAN's experience shows that active participation by

government agencies and professional accounting bodies is crucial if financial reporting regulations are to be enforced effectively.

The significant success of the IASC in having its standards accepted in ASEAN should be noted. The outwardly-oriented economies of Malaysia, Singapore, and Thailand already rely, almost exclusively, on IASC pronouncements.[42] Brunei and Indonesia are expected to use IASC standards for domestic reporting in the future. Clearly, despite existing differences involving mainly Philippine accounting standards, ASEAN as a whole appears to be moving towards a global, rather than a regional, notion of accounting harmonization. This development calls for a redefinition of the ASEAN Federation of Accountants' (AFA) role with regard to accounting harmonization in ASEAN. A dual strategy might be considered. First, there appears to be a strong case for AFA to seek greater representation and participation in IASC deliberations, especially now that the IASC has become the cornerstone of accounting standards in most ASEAN countries. At present, only Malaysia and Singapore have been represented on some of the IASC's working committees.[43] ASEAN's bargaining power could be enhanced if the accounting professions comprising AFA presented themselves as a unified body in IASC deliberations. Second, it might be advisable for AFA to attend to the unique aspects of financial reporting likely to emerge in ASEAN as a result of greater economic interchanges flowing from AFTA. Issues such as intra-regional joint ventures, accounting for natural and human resources, and environmental conservation are topics of vital importance to ASEAN as a regional organization. In pursuing these objectives, AFA, in the words of Choi (1979), could truly emerge as "a new international accounting force" (p. 53).

NOTES

1. ASEAN was formed in 1967 with five original members: Indonesia, Malaysia, the Philippines, Singapore, and Thailand. Brunei joined in 1984 while Vietnam is expected to join in 1995.
2. AFTA's aim is to create minimum barriers to trade and investment among ASEAN member countries. This will be accomplished by reducing tariffs on a wide range of products and by harmonizing regulations relating to trade and investment.
3. AFA consists of the professional accounting bodies of the six ASEAN members, namely: Brunei Institute of CPAs, Ikatan Akuntan Indonesia, Malaysian Association of CPAs and Malaysian Institute of Accountants, Philippine Institute of CPAs. Institute of CPAs of Singapore, and Institute of Certified Accountants and Auditors of Thailand. AFA's aims include promoting regional co-operation among ASEAN accountants and considering the development of ASEAN accounting standards. See Choi (1979).
4. The *Conseil National de la Comptabilite* (French National Accounting Council) is responsible for developing the plan which has undergone several amendments, the latest of which was to incorporate the European Community's accounting directives. For a discussion of financial accounting in France, see Standish (1991).
5. For a discussion of aspects of financial reporting in these countries, see: Blake and Amat (1993); Choi and Hiramatsu (1987).
6. For a discussion on how the macroeconomic vs. microeconomic dichotomy affects accounting measurement and disclosure, see Nobes and Parker (1991), especially Chap. 2, pp. 23-37.
7. Tax regulations, however, may indirectly influence the choice of accounting policies. For example, most ASEAN countries disallow the LIFO method for inventory valuation purposes. Consequently, the use of LIFO for financial reporting purposes in uncommon in ASEAN because of the inconvenience of having to translate financial statements. See SyCip, Gorres, Velayo and Co. (1984).

8. These agencies are: Economic Planning Unit (Brunei); National Planning Board/BAPPENAS (Indonesia); Ministry of International Trade and Industry (Malaysia); National Economic Development Authority (Philippines); Economic Development Board (Singapore); and National Economic and Social Development Board (Thailand).
9. The financial accounting standards in ASEAN are found in the following:

   - Ikatan Akuntan Indonesia, *Indonesian Accounting Principles* (Jakarta: Drs. Hadi Sutanto, 1989).
   - Malaysian Institute of Accountants, *Malaysian Accounting Standards*, series of pronouncements (Kuala Lumpur, MIA, 1993).
   - Accounting Standards Council, *Compilation of Statements of Financial Accounting Standards* (Manila: ASC, 1988).
   - Institute of Certified Public Accountants of Singapore, *Statements of Accounting Standards*, series of pronouncements (Singapore: ICPAS, 1994).
   - Institute of Certified Accountants and Auditors of Thailand, *Accounting Standards Nos. 1-24* (Bangkok: ICAAT, 1993).

10. International Accounting Standards Committee, *Framework for the Presentation of Financial Statements*, par. 10 as adopted by the MIA and MACPA in Malaysia and Singapore that emphasizes arriving at a "true and fair view."
11. Thailand: FAS No. 1, par. 5; The Philippines: SFAS No. 1, Sec. C., par. 1; Indonesia: PAI, Ch. 1, Art. 1.1).
12. *Ibid.*
13. *Ibid.*
14. Choi and Hiramatsu (1987); Standish, 1991; Blake and Amat (1993).
15. Whereas professional accounting bodies in Germany, Japan and France issue accounting statements, their role generally is limited to an advisory capacity. For example, the Business Accounting Deliberations Council (BADC) in Japan only provides advice to the Ministry of Finance in formulating accounting standards. Representatives from the Japan Institute of CPAs constitute a minority in the BADC, which also includes members from academe, government, and industry.
16. See Note 9, *op. cit.*
17. Requirements for an independent audit are found in pertinent provisions of each country's companies law, securities legislation and administrative guidelines issued by government agencies. See, for example, Needles (1988).
18. The specific disclosure requirements are found in the *Stock Exchange Listing and Administration Manual* of each ASEAN stock exchange. Currently, only Brunei does not have an organized stock exchange.
19. Hatfield (1966) and Seidler (1967) first proposed the notion of accounting "spheres of influence" to portray patterns of international accounting thought and practices. The idea has been further developed, notably by Mueller (1967, 1968); AAA (1977); and Nobes (1984).
20. Political independence was achieved in different periods: Philippines (1940s); Indonesia (1950s); Malaysia and Singapore (1960s); Brunei (1980s). For an analysis of legal developments in ASEAN, see: Maolanond and Yasuda (1985); Yasuda (1993). A discussion of the evolution of financial reporting regulation is provided in Briston and Foo (1993) for Singapore and Briston (1990) for Indonesia.
21. Although there are differences in the detailed powers of the individual agencies, the principal regulatory aim is the same: to centralize the supervision of national securities markets. All matters dealing with securities markets or the issue of corporate securities are therefore dealt with and approved by the designated securities agency in each country.
22. These rules are patterned after Regulation S-X of the U.S. Securities and Exchange Commission. This regulation defines the form and content of the requirements for financial statements of companies whose securities are registered with the SEC. See *Badan Pelaksana Pasar Modal* (1989) and Securities and Exchange Commission (1993).

23. For Indonesia, the authority is defined in *Presidential Decree No. 52 of 1976* which created the Capital Market Executive Agency (Bapepam). In the Philippines, the power of the Philippine SEC to set accounting standards is defined in the *Revised Securities Act*, sec. 48.
24. ASC (1988), "Description of the Council and Rules of Procedures," pp. xi-xvii.
25. The legislative provisions are found in the Philippine *Revised Accountancy Law, 1975*. This law governs the practice of accounting, whether in government, industry, academe, or public practice.
26. For both Malaysia and Singapore: Accounting Responses to Changing Prices (IAS 6); Information Reflecting the Effects of Changing Prices (IAS 15); Financial Reporting in Hyperinflationary Economies (IAS 29); Disclosures in the Financial Statements of Banks and Similar Financial Institutions (IAS 30): Financial Reporting of Interests in Joint Ventures (IAS 31). For Malaysia only: Accounting for Government Grants (IAS 20); Accounting for Business Combinations (IAS 22); Related Party Disclosures (IAS 24).
27. These are IAS 2, 3, 4, 5, 9, 10, 11, 13, 14, 16, 18, 22, 23, 24, 25 and 28.
28. ICAAT Financial Accounting Standards Nos. 1, 2, 3, 4, 5, 7, 11, 12, 16, 20.
29. Indonesian Accounting Standards were patterned after AICPA'S *Accounting Research Study No. 7*, "Inventory of Generally Accepted Accounting Principles for Business Enterprises."
30. Malaysian Accounting Standard (MAS) 2 ("Accounting for Acquisitions and Mergers"); MAS 3 ("Accounting for General Insurance Business"); MAS 4 ("Accounting for Life Insurance Business"); MAS 5 ("Accounting for Agriculture").
31. Statement of Financial Accounting Standard (SFAS) 12 ("Revaluation of Property, Plant and Equipment through Appraisal"); SFAS 19 ("Summary of GAAP for the Banking Industry").
32. ICPAS issues Statements of Recommended Accounting Practices (RAP) for companies which expand upon the Statements of Accounting Standards. RAPs are not mandatory but provide further guidance in the preparation of company accounts. Examples include: RAP 1 ("Standards of Disclosure of Financial Statements"), RAP 3 ("Reporting Value Added Information"), and RAP 4 ("Accounting for Financial Futures").
33. For historical insight to the development of the accounting profession in ASEAN countries: Brunei (Foo, 1993); Indonesia (Siddik and Jensen, 1980; Briston, 1990; Yunus, 1988); Malaysia (Ahmad, 1980; MACPA, 1988); Philippines (PICPA, 1967; Santiago, Bravo and Gesmundo, 1979); Singapore (Briston and Foo, 1990; ICPAS, 1994): Thailand (ICAAT, 1973; Whittle, 1980).
34. In Brunei, Malaysia and Singapore, the statutory audit requirements are found in their respective *Companies Acts*. In the Philippines, the relevant provisions are in the *Corporation Code* and the *Revised Securities Act*. Finally, in Thailand, audit requirements are specified in the *Civil and Commercial Code* as well as in the *Public Limited Companies Act B.E. 2535* (1992).
35. The Foreign Investment Co-ordinating Board (BKPM) of Indonesia requires that all foreign joint venture companies (known locally as *Penanaman Model Asing* or PMA) submit annual audited financial statements. Under current investment rules, foreign companies may only do business in Indonesia as PMAs, with very few exceptions (Price Waterhouse, 1993).
36. The undisclosed liabilities occurred when the company overextended itself using forward contracts to purchase company shares. When Pan-Electric's creditors realized the company's financial debacle, they decided to liquidate, causing panic in the stock markets of Malaysia and Singapore.
37. A much publicized case in Indonesia involved a state-owned bank, Bapindo, which lent significant amounts to a businessman, Eddy Tansil. The financial impact of the loans on the banking system only became known when Tansil's companies defaulted on their payments. Similar cases also occurred in the Philippines, involving massive financial institutional loans to so-called 'cronies' of former President Marcos.
38. These surveillance units generally monitor stock price movements. Significant fluctuations in any one stock not accounted for by known information about the company are investigated to ensure that the listed company complies with the continuing disclosure requirements set by the stock exchange.
39. Among ASEAN countries, Singapore has the most developed securities markets, followed by Malaysia and Thailand. While the stock markets of Indonesia and the Philippines have grown

significantly over the last five years, they still lag behind in terms of volume and market capitalization. For an analysis of the characteristics and problems of securities markets in ASEAN, see Ghon Rhee and Chang (1990).

40. Price Waterhouse (1993), update of 1994 developments.
41. Professional accounting bodies in ASEAN are members of the IASC. As such, they are called upon to use their best endeavors "to ensure that [local] published financial statements comply with International Accounting Standards in all material respects" (IASC, Preface to International Accounting Standards, par. 4).
42. Among ASEAN countries, the economies of Singapore, Malaysia and Thailand are the most outwardly-oriented, i.e., they place much emphasis on developing their export capabilities. See World Bank (1993).
43. At present, IASC committees are dominated by professional accounting bodies from the founding members, namely: Australia, Canada, France, Germany, Japan, Mexico, the Netherlands, the U.K., Ireland and the U.S.A.

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Book Reviews

Accounting Standards *(4th ed.), by John Blake. Pitman Publishing, London, 1994, 260p. £16.99; US$26.84*

This book provides a comprehensive account of all current United Kingdom accounting standards as at July 1993. As the author explains, with the introduction in 1990 of a new system of setting accounting standards under the Accounting Standards Board (ASB), the U.K. accounting standards, which used to be known as Statements of Standard Accounting Practice (SSAPs), are now known as Financial Reporting Standards (FRSs) and exposure drafts (EDs) are known as Financial Reporting Exposure Drafts (FREDs). The book contains a total of 25 chapters. The first chapter describes the background to the current accounting standard setting mechanism in the U.K. while the last chapter is devoted to the EDs and FREDs. The other 23 chapters are on accounting standards, with a chapter devoted to each of the SSAPs and FRSs.

The book has been written for undergraduate courses in accounting and business studies, as well as for a number of U.K. professional examinations. Each of the chapters on accounting standards covers the definitions of the terms used, issues addressed, requirements, compliance problems, and controversies with respect to the standard under discussion. Examples explaining the recommended accounting treatment are given in many chapters. The questions at the end of each chapter are a good resource for teaching and learning purposes. The answers to these questions given at the end of the book are particularly useful to students preparing for examinations.

Chapter 1 provides a brief but useful account of the historical background to the accounting standard setting in the U.K., starting from 1942. The chapter explains, among other things, why accounting standards became necessary in the U.K. It also discusses the standard setting arrangements under the Accounting Standards Committee (ASC), mechanisms for enforcing accounting standards, Dearing proposals, and the new system of standard setting. The major changes introduced under the ASB are highlighted. This chapter also includes a brief introduction to the due process procedures followed by the IASC.

Chapter 2 includes a discussion of the important elements of a cash flow statement with a detailed worked example explaining how a cash flow statement is prepared according to FRS-1: Cash Flow Statements. Readers should find this chapter very useful, particularly in view of the increasing recognition given to the importance of cash flow information in analyzing enterprise performance in both academic and practitioner circles.

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Chapter 3 provides a brief discussion of the evolution of the Group accounts. It discusses, among other things, exclusion of subsidiaries from consolidation, accounting for excluded subsidiaries, minority interests, consolidated accounting policies, and changes in the group, as explained in FRS-2: Accounting for Subsidiary Undertaking. Some understanding of consolidation procedures is assumed in this chapter. A brief history of accounting for the results of associated companies in the U.K. is provided in Chapter 5. The consolidation issues explained in SSAP-1: Accounting for the Results of Associated Companies are discussed through a worked example.

Chapter 4 discusses the issues related to the presentation of profit and loss accounts, e.g., "current operating income" approach versus "all inclusive profit" approach. It explains, with an example, how to operationalize the "all inclusive" concept of profit as recognized by FRS-3: Reporting Financial Performance. Specific issues related to acquisition and discontinuance, asset disposals, prior period adjustments, and investment companies are also discussed. Chapter 7 discusses the required practice and disclosure under SSAP-3: Earnings Per Share, with an example identifying the practical problems of application.

Chapters 10 and 14 consider taxation issues. Chapter 10 begins with an overview of taxation of companies. The chapter contains a detailed worked example to explain, among other things, how to prepare financial statements in accordance with the requirements of SSAP-8: The Treatment of Taxation Under the Imputation System in the Accounts of Companies. Chapter 14, SSAP-15: Accounting for Deferred Taxation, explains the need for a standard in this area, and describes the liability method and the deferral method by using an example. Advantages and arguments in favor of both methods are presented. It also provides a history of the various official guidelines on the subject to highlight the controversies involved. The auditor's responsibilities under SSAP-15 are discussed in a separate section.

Chapter 11 contains definitions of terms which are important in valuing stocks, i.e., cost, net realizable value, long-term contract, attributable profit, foreseeable losses, and payment on account. It explains some of the practical difficulties in applying the accounting principles recommended in SSAP-9: Stocks and Long-term Contracts.

Chapter 12, SSAP-12: Accounting for Depreciation, begins by explaining the need for a standard in this area. It describes the accounting issues related to changes in depreciation, land and buildings, disclosure, allocation and revision of estimated useful life, and depreciation method. It also discusses the considerable controversy over the requirement to provide for the depreciation of freehold and long leasehold buildings.

Chapter 13 presents the main arguments in support of both the deferral method and the write-off method in regard to accounting for research and development expenditures. It provides an interesting discussion on the background to SSAP-13 issued in 1989, with a provision for disclosure of the total R&D write-off in the year, was in response to the Companies Act 1985 and the European Union Fourth Directive. In addition, the chapter also includes a discussion on the factors that might usefully be considered by company management in choosing an accounting policy in regard to R&D.

Chapter 15 is on SSAP-16: Current Cost Accounting. Although SSAP-16 was withdrawn in 1986 and there is no current U.K. accounting standard on the topic of inflation accounting, the author provides the following three reasons why the U.K. accounting profession should have an interest in it:

1. Even at low levels of inflation, it has been shown that historical cost accounts include material distortions.

2. Internationally a number of countries, particularly in Latin America, continue to experience inflation rates at a level where unadjusted historical cost accounts are meaningless. Thus an understanding of approaches to inflation accounting is essential to the accountant working in an international environment.

3. Should inflation rates increase in the U.K. the accounting profession will be expected to respond with an appropriate system.

The chapter provides a useful historical background to the U.K. inflation accounting proposals. It also shows the calculations involved under both SSAP-16 and the ASC Handbook on Accounting for the Effects of Changing Prices (1986) with detailed worked examples.

Chapter 19, SSAP-20: Foreign Currency Translation, identifies transaction exposure and translation exposure. The chapter discusses the benefits of both the temporal and closing rate methods and explains the computations involved by using an example. It also notes that the provisions of SSAP-20 are very similar to those prescribed in the USA and Canada.

Chapter 20, SSAP-21: Accounting for Leases and Hire Purchase Agreements, begins by explaining how the leasing industry had grown over a ten-year period 1975-1984. It also provides an historical background to the development of an accounting standard in this area. The chapter introduces the basic accounting problems associated with leases, and explains the computations from the points of view of both the lessee and the lessor, by using examples.

Chapters 6, 8, 9, 16, 17, 18, 21, 22, 23, and 24 are short chapters with less than 6 pages each. Chapter 6 provides a brief discussion on the fundamental accounting concepts including in SSAP-2: Disclosure of Accounting Policies, and the relevant IAS. Chapter 8 includes an example to highlight the aspects of practical application of the requirements under SSAP-4: The Accounting Treatment of Government Grants. Chapter 9 briefly describes the nature of Value Added Tax. Chapter 16, SSAP-17: Accounting for Post Balance Sheet Events, includes a discussion on "Window dressing" and summaries of examples on adjusting events and non-adjusting events as given in an appendix to SSAP-17. Chapter 17 describes the required accounting treatment of contingencies under SSAP-18: Accounting for Contingencies. Chapter 18, SSAP-19: Accounting for Investment Properties, provides a background to SSAP-19. The author states that SSAP-19 "resulted in the presentation of useful information, but did so at the cost of a substantial departure from traditional accounting conventions." Chapter 21 discusses the requirements of SSAP-22: Accounting for Goodwill. It notes that the two alternative methods of treatment permitted by SSAP-22, i.e., as an asset that has been purchased and as an accounting anomaly, are based on contrasting views as to the basic nature of goodwill. The treatment of goodwill as an asset leads to an amortization approach where as the treatment as an accounting anomaly leads to an approach that involves treating goodwill in a way that has the minimum impact on the accounts. Chapter 22 explains the guidance offered in SSAP-23: Accounting for Acquisitions and Mergers, on the situations where "merger accounting" which offers an alternative mechanism for consolidation that "pools" the distributable reserves of the merged companies, is acceptable and the ways in which it should be applied. Chapter 23 describes the accounting treatment of pension costs as recommended by SSAP-24: Accounting for Pension Costs. Chapter 24 begins with a note on the need for a standard in the area of segmental reporting. It describes the practical problems of compliance with SSAP-25: Segmental Reporting by using a worked example.

Chapter 25 is devoted to introducing the outstanding exposure drafts, both from the ASC and ASB. They are, ED46: Related Party Transactions; ED51: Accounting for Fixed Assets and Revaluations; ED52: Accounting for Intangible Fixed Assets; ED53: Fair Value in the Context of Acquisition Accounting; ED55: Accounting for Investments; FRED3: Accounting for Capital Instruments. The chapter also mentions six abstracts from the Urgent Issues Task Force, i.e., Convertible Bonds, Treatment of Goodwill on Disposal of a Business, Presentation of Long-Term Debtors in Current Assets, Transfers from Current Assets to Fixed Assets, Accounting for Post-retirement Benefits other than Pensions, and True and Fair Override Disclosures. Considering that this edition of the book was a 1994 publication, this chapter needs to be up-dated to include more recent FREDs.

The emphasis of the book is clearly on technical aspects of accounting standards. The book is well written and easy to read. The author has attempted not only to discuss various accounting standards and exposure drafts, but also to provide some information about the background to the issues addressed. Furthermore, in many cases, the requirements of the accounting standard are compared with the related requirements of the Companies Acts. The author deserves to be congratulated on producing an excellent reference book in a very important area of accounting in the U.K.

Reviewed by M. Hector B. Perera
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Business Behavior and Information, *edited by Yuji Ijiri and Isao Nakano, Carnegie Mellon University Press, Pittsburgh, 1992, 200 p. $15.00 U.S.*

This book edited by Professor Y. Ijiri and Professor I. Nakano consists of seven chapters presenting the seven papers of the Kobe Forum, "Business Behavior and Information," held at Kobe University in November 1991. The Forum was organized by Kobe University in cooperation with the Carnegie Mellon University in order to foster interdisciplinary interactions, as well as interactions between researchers from the United States and from Japan.

Chapter 1, written by Professor Y. Ijiri, deals with the impact of subjectivity of information on behavior and decision processes in an international environment. The intention of the author is to show the relationship between business behavior and accounting information. Information in general is seen as a "surrogate" which has no value in itself, but represents the state of something else (called "principal"). Accordingly, information is defined as a means to get to know the state of this principal and thereby to generate "knowledge" which then can affect the behavior of the information user in the decision process. Especially in the area of performance management, where the principal (e.g., "long run profit" as a target) can be difficult to comprehend or determine, Professor Ijiri shows that accountants are facing the problem that the chosen information surrogate (e.g., information figures) starts to become a principal in itself ("principalized information") and influences business behavior as if it were an original management objective.

From the author's perspective, however, accounting procedures influence business behavior not only by the feedback provided to management. The mere fact of recording business activities can also be seen as a means to assure responsible behavior in a company

even when no one actually examines the records. Furthermore, Professor Ijiri shows that besides the problem of "principalized information" in an international business setting the lack of widely accepted or not sufficiently detailed standards can lead to subjective information not easy with which to deal and costly to check. The common international language is then reduced to the basic procedures of double-entry bookkeeping. Nevertheless, the author emphasizes the "cautious use" of this subjective information in international management because objectivity usually is linked to considerable costs of standardization and often lacks the timeliness needed in decision making.

In Chapter 2, Professor K. Shimomura focuses on falsified information. His intention is to start the construction process of a model of economics of trade under falsified information which could show the way to a society with less deception and manipulation. The author for this purpose uses a "simple model of a firm which describes labor-management relationships from a game-theoretical point of view."

First, a bilateral closed-shop system in a competitive commodity market is assumed. Each of the two parties—entrepreneur versus union members—is given the possibility to misrepresent its true situation at the bargaining table. Only the entrepreneur (respectively the union) knows the true shape of the production (respectively the utility) function. Each side seeks to manipulate the information to be better off in the trading process. The author then examines what will happen to the equilibrium point of the model if the labor market gets liberalized. From this research, the author derives the conclusion that resource allocation under falsified information is Pareto-suboptimal and that no gains from trade can be realized: trade liberalization in the labor market in this model does not result in a situation that is beneficial to both groups.

In Chapter 3, Professor S. Sunder discusses the role of insider information in security markets. The author argues that information is naturally dispersed among members of a group because there are barriers to centralized compilation: information can exist in non-storable form, it can be too voluminous to handle, and there are no dependable means of persuading individuals to reveal information if they cannot benefit from doing so. Because of these informational barriers the role of markets as institutions for voluntary exchange (of information) is emphasized.

According to the author, in security markets most of the insider trading problem arises from defining and enforcing an effective accountability relationship between the top managers of a firm and a large group of shareholders. On the one hand, information disclosure requirements focus on objective information and filter out the subjective statements. As a result, shareholders-CEO relationships in large corporations tend to be relatively rigid and not enough customized. On the other hand, information disclosed to the shareholder would also be available to competitors.

Therefore, the author sees the main problem in drawing a boundary between the amount of information held back as the corporation's competitive insider knowledge, and the amount of information disclosed to offer fair terms of trade for all traders in the market. If all use of insider information were penalized, no one would be interested in producing information necessary for the functioning of a market. According to the author, this makes it difficult to develop a balanced policy on insider trading. Due to the lack of international trade as such, especially in an international environment, the detection of insider trading activities is a difficult task. Although not discussed in depth, pragmatic enforcement and stability of policy are proposed as the main elements of an appropriate approach to insider trading.

In chapter 4 Professor H. Itami intends to develop a new paradigm of management based on the concept of "ba." The direct translation of the Japanese word "ba" means "place," but for the understanding of his thesis, the author proposes "interactive field" as a meaningful translation. Such a "ba," simply stated, "is a situation in which people participate, observe each other, have common experience, and understand and influence each other." It can be seen as a situational framework for the creation of informational order.

For such a "ba" to exist, the participating members should at least partially share a common agenda, interpretation code, information carrier, and desire for association. The intended result of this interaction is the emergence of a so-called macro-order: people begin to have similar understandings of the world and their immediate environment and interpretation codes converge. Judgments are formed, decisions and actions are influenced. According to Professor Itami, in the best case, the group-members "co-vibrate": people find the other members in the interactive field to have similar interpretations and ways of thinking and feeling. Or to express it in other words, a common (corporate) culture develops.

Situations of external pressure excepted, ba's usually do not just emerge in a firm, but are often initiated by management—sometimes implicitly as a by-product of setting the task environment for a group or person. However, the main task of management according to the author is to "pay attention to the ba's basic requirements and to steer the flow of information within the ba." In this style of management, people are placed into the background and thought to be free and autonomous there: The target is informational interaction, not individuals. In this sense, according to Professor Itami, the philosophy of "ba" enables the co-existence of freedom and order.

Chapter 5 represents an attempt of Professor H. Yamaji to foster a new understanding of the function of accounting information disclosure: disclosure of accounting information according to the author is not merely a measure of communication between firms and stockholders, but also a measure for avoiding destructive solutions to a situation of "prisoner's dilemma" in which large organizations and public stakeholders are the two parties.

To provide an empirical background to this theory, some brief examples of American accounting history are given: the development of accounting information disclosure in the regulation of railroads, the anti-monopolistic movement against large corporations such as U.S. Steel, regulative laws in security markets, the struggle against political corruption in local governments, and the beginnings of information disclosure of labor unions. In all these examples, the author sees the function of accounting information in solving socio-economic problems by combining the idea of disclosure with the idea of democracy. Hard contracts, conventions, and a continuous disclosure policy are the methods to avoid destructive solutions to the "prisoner's dilemma." This game theoretical approach implies that accounting numbers do not effectively represent true and fair view values because they are susceptible to being legally and formally manipulated in the course of socio-economic processes. As a second implication socialization policies are said to be an ineffective means for the public control of economy. Although not discussed in depth and length, these two conclusions of author may be a good starting point for further academic discussions.

In Chapter 6 Professor T. W. McGuire and Professor N. P. Melone deal with the problem of "base-rate fallacy" and its implications for management and the international environment. The authors generally explain that (experimental) situations of uncertainty are often characterized by prior probabilities (base rates) and additional information (individuating information, base cue): e.g., an individual knows that a group of persons consists of 30 engineers and 70 lawyers (base rates) and gets a verbal characterization of one of the group

members (individuating information). Then, this person is asked to estimate the probability that the described person is a lawyer rather than an engineer. Base-rate fallacy in this context means that individuals tend to ignore or underweight the base rate that appropriately should have been taken into account.

In contrast to existing base-rate fallacy literature, the authors found no evidence of a general underweighting of the base rate relative to case cues, but there was significant evidence that individuals also take into consideration extra-experimental beliefs when forming probability judgments. It is not the base rate but the individuating information that is underweighted in the decision processes. Furthermore, judgments are said to be dependent of the utility function of the judge and influenced by a variety of random and systematic errors (insensitivity to sample size, overconfidence, hypothesis confirming data-research strategies etc.).

As a conclusion, the authors recommend managers to pay attention to the different sources of error to increase the subjective dispersion of probabilistic data provided to them, and also to shrink the data for their decisions toward base rates ("outside view"). In an international environment, the authors argue that globalization—causing increased diversity and geographical dispersion of stakeholders—leads to softer information required for decision making. The authors believe that flatter organizations consisting of empowered employees necessary for such an environment face the problem that managers should know their workers better in order to treat the information communicated by them "harder." Hence, the "genetic managers" of the 70s and "job-hoppers" are said to be dead.

The last chapter, written by Professor H. Yoshihara, is an analysis of informational problems that Japanese multinational corporations are facing. The author complains that Japanese multinationals tend to be too "Japan-centric" as far as their staffing policies and decision processes are concerned. Although these corporations have been successful in implementing Japanese manufacturing systems on the shop floor level, most of them, according to the author, have failed to integrate local executives into the company-wide decision processes. Local subsidiaries usually are managed by Japanese people sent abroad (although less than about 4% of them wish such an assignment), in addition, the language used on the top management level is Japanese.

According to the author, only few Japanese multinationals have started to regard English as a basic common language of communication, and to emphasize their employees' English skills. In contrast, as far as the recruitment of local workers is concerned, Japan's multinationals are still learning from European and American companies presently operating in Japan. The high costs of sending Japanese staff abroad, the shortage of employees who could be sent abroad, and the local staffing requirements of foreign governments are said to be the main reasons for recruiting local managers for foreign subsidiaries of Japanese firms as well as their better understanding of local culture and language. On the other hand, the author sees possible disadvantages of a wider use of English language and the employment of local managers in slowing down the pace of communication and decision making. Furthermore, growing frictions and conflicts caused by the foreigners' different way of thinking, and the Japanese fear of lacking loyalty and leakage of company secrets are stated as additional disadvantages. Conclusively, the author points out two general problems in analyzing the cost and benefits of local staffing policies. First, in contrast to the benefits, the costs involved are more concrete. Second, short-term costs and possible long-term benefits operate on different time horizons.

In summary, the book in a very compressed form presents seven different perspectives on business behavior and information. Although a few parts are written in rather scientific

language and require some basic knowledge of the topics discussed, the book in general can be very much recommended to non-scientists. Practitioners, especially from the areas of financial and management accounting, will find some stimulating ideas which may be very helpful in forming a new understanding of the informational side of their business. The reader is required to review his/her own concept of information, which in most cases may not exist in an explicit form. Information flows and the corresponding decision processes, especially in an international business setting, are presented as a highly complex result of a variety of interdependencies not easy to manage. At the same time, the reader for practical as well as for academic purposes is offered some concepts and arguments for a better understanding and a differentiated approach to the world of information and its impact on behavior.

Reviewed by Bernd H. Schedler
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INSTRUCTIONS FOR AUTHORS

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BOOK REVIEWS

The International Journal of Accounting

International Accounting Harmonization and the Major Developed Stock Market Countries: An Empirical Study

Emmanuel N. Emenyonu and Sidney J. Gray
Sacred Heart University and the University of Warwick

Key Words: Harmonization; international; measurement

Abstract: *The purpose of this study is to assess the extent to which the accounting measurement and associated disclosure practices of large listed companies have become more harmonized internationally. An empirical study of companies based in the five major developed stock market countries, namely, France, Germany, Japan, the United Kingdom and the United States, examines the results of the efforts made so far to reduce or eliminate diversity in accounting practices internationally. An evaluation of changes over the 20 year period from 1971/72 to 1991/92 shows that while progress has been made in some respects, international accounting harmonization has remained an elusive goal.*

Technological innovations coupled with the deregulation of national capital markets have created a positive climate for the increasing integration of the world's capital markets. This phenomenon which has been variously described as "globalization" or "internationalization" has meant that companies are no longer limited in their fund raising and investment activities to their home countries. Similarly, investors incessantly search around the world for the best portfolios. This situation brings to the fore the issue of the accounting practices which underlie the numbers on which these cross-border financing and investing decisions are predicated. Furthermore, the increasing trend of multinationality of companies raises serious questions as to the adequacy and suitability of ethnocentric accounting guidelines, as conflicting standards of national reporting pose additional problems and costs both for multinational corporations and information users.

In recognition of the problems posed by international accounting diversity, leading professional accountancy bodies from Australia, Canada, France, Germany, Japan, Mexico, Netherlands, the United Kingdom and the United States of America established the International Accounting Standards Committee (IASC) in 1973 in a bid to promote the harmonization of international accounting practices.

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Shortly after its establishment in 1973, the IASC predicted that "Provided that the initial enthusiasm and thrust with which the IASC was started is continued, its impact in the years to come will be important. It will take perhaps five to ten years before its full effects are recognized, but after that they will increase each year" (IASC, 1975). In retrospect, optimism about international harmonization or reductions in international accounting diversity may seem to have been misplaced, because in practice IASC standards have often been necessarily flexible in order to achieve consensus. They have also been difficult to enforce in countries such as Germany and Japan, where professional accounting organizations do not have a significant role in the standard setting process.

However, any progress in international accounting harmonization, or lack of it, is not just the responsibility of the IASC. Many other agencies have been involved such as the United Nations and OECD together with the European Union (EU) at the regional level. Nevertheless, the IASC is perhaps the only organization to claim prime responsibility for promoting international accounting harmonization or standardization on a world-wide basis.

It is against this background that the purpose of this study is to assess the extent to which the accounting measurement and associated disclosure practices of major companies based in five countries, namely, France, Germany, Japan, the U.K. and the U.S.A. have become more harmonized or less diverse in the context of efforts made since the 1970s to reduce or eliminate differences in accounting policies and practices internationally. Given that 1993 marked the 20th anniversary of the IASC's establishment, it would now seem an opportune time to assess how much progress has been made over this 20-year period in terms of a reduction in international accounting diversity. Furthermore, it would seem useful to identify areas of continuing concern which warrant the attention of international accounting harmonization agencies in the years ahead.

THE MEANING OF INTERNATIONAL ACCOUNTING HARMONIZATION

The terms "harmonization" and "standardization" tend to be used rather loosely and sometimes interchangeably. To clarify these concepts, it is probably helpful to think of a spectrum of practice ranging from total flexibility and diversity to total uniformity. In this context, harmonization is a process involving movement away from total diversity towards a state of harmony which may include total uniformity (Tay and Parker, 1990). Standardization is also a process involving movement away from total diversity towards total uniformity. Thus both harmonization and standardization involve a reduction in accounting diversity. The difference between them seems to lie in their relative flexibility or strictness in terms of their application to accounting regulation and practice. Harmonization seems to imply consensus and coordination in the context of a more flexible approach, (compared to standardization), with acceptance of a state of harmony which may be short of total uniformity. Standardization, on the other hand, implies a more strict approach resulting ultimately in a state of uniformity. These concepts are applicable at both the national and international level.

For the purposes of this study, the focus is on a reduction of international accounting diversity as an indicator of an increase in harmony. This is consistent with both the harmonization and standardization approaches but at the same time it does imply that uniformity

is desirable, which may not necessarily be the case, i.e., some flexibility may be appropriate to reflect different circumstances.

It is also important to note the distinction between harmonization at the level of regulation as compared to the level of practice. Given that the ultimate concern is to enhance the comparability of financial statements to users, then any measure of success in the context of international harmonization or standardization would seem best focused on de facto accounting practices as is the case in this research.

PRIOR EMPIRICAL RESEARCH ON INTERNATIONAL HARMONIZATION

Earlier writers have written extensively on such issues as the benefits and costs of harmonization, obstacles and problems hindering harmonization, scope for harmonization, factors that are encouraging the harmonization drive and so on, (see, for example, Carey, 1970; Chevalier, 1977; Fantl, 1971; Gray, 1984; McComb, 1979; Moulin, 1988; Turley, 1983; Turner, 1983). Accordingly, this review of prior research will concentrate on those studies which are directly related to the measurement of international harmonization.

Nair and Frank (1981, p. 76) attempted to ascertain the impact of the harmonization endeavors of the IASC. Consequently, they surveyed the effect of IAS 1 to 10 on the accounting practices of some thirty seven countries, using the Price Waterhouse surveys of 1973, 1975, and 1979. Friedman's Analysis of Variance was used to analyze the data. They found that the period of the IASC's existence had coincided with an increase in the harmonization of accounting standards among the countries surveyed. It should be noted, however, that the Price Waterhouse Surveys are limited in terms of reliability not least by their focus on regulation rather than practice (Nobes, 1981).

Evans and Taylor (1982) with aims similar to those of Nair and Frank (1981), though more limited in terms of the scope of their research, studied the effect of IAS 2, 3, 4, 6 and 7 on financial reporting practices in France, Japan, U.K., U.S.A. and West Germany. This study relied on data in the financial reports of selected companies in each of the countries for the period from 1975 to 1988. The data were analyzed using percentages in respect of compliance. Based on their findings they concluded that the IASC had had very little effect on the accounting practices of the countries studied.

Doupnik and Taylor (1985) set out to assess the extent to which 16 Western European countries conformed to a "basic core of accounting practice," using IAS's 1-8. Data collected through a survey questionnaire and the Price Waterhouse 1979 survey were analyzed. The findings supported the hypothesis that many differences still existed in Western European accounting practices though some increased compliance with IASC standards was found. This latter finding was, however, disputed by Nobes (1987) who also concluded, from a recent study of accounting practices by U.S. multinationals, that compliance with IASC standards was negligible (Nobes, 1990).

The Federation des Experts Comptables Europeens (FEE) has also produced some noteworthy surveys. The 1989 Survey (FEE, 1989), covering 1987 accounts, sought to ascertain whether or not the implementation of the EC Fourth Directive on Annual Accounts has resulted in the increased harmonization of accounting practices within the member countries. Consequently, data were gathered from survey questionnaires and the annual reports of about 191 companies from nine countries. The survey concluded that for those areas cov-

ered comprehensively by the Fourth Directive a high level of harmonization can be observed. On the other hand, an apparent lack of harmonization was seen in those areas covered only partially by the Directive. An update and extension of this survey (FEE, 1991) based on 1989 accounts covered 441 companies from 15 European countries including three non-EC countries. A major finding of the survey was the suggestion that other factors besides the Fourth Directive are having a significant influence on accounting practice at national level. What both of these surveys do not do, however, is to attempt to quantify the existence of significant differences in practice and the current status of harmonization.

Van der Tas (1988), in an exploratory article, sought to quantify harmony, to determine when and to what extent harmonization has taken place and then to measure the impact of the organizations involved in international harmonization. In order to accomplish the set goals, three indices of concentration measurement were developed and adapted. The basic tool was the Herfindahl index, or H-index, one of many concentration measures. Variants of the H-index were developed: the C-index to handle national and the I-index to handle international harmonization measurement. Using these indices, Van der Tas measured levels of harmonization on the subject of accounting for Deferred Tax in the U.K., accounting for the Investment Tax Credit Equalization account in the Netherlands, and the Valuation of Land and buildings in the Netherlands. Finally, he attempted to compute a harmonization index for accounting for the Investment Tax Credit in the U.S. and the Netherlands. From these indices, which were computed over a period ranging from 1965-1985, it was possible at a glance to recognize periods of high and low harmonization. However, this was an exploratory article with substantial scope for development.

Tay and Parker (1990), after reviewing Van der Tas (1988) and other notable papers on the measurement of international harmonization, identified the following as major problems: data sources, operationalization of concepts, statistical methods employed, and distinguishing changes in accounting practice due to compliance with standards from changes due to other reasons. They also suggested an alternative approach to harmonization measurement—a study focused on the actual practices of companies as disclosed in their annual reports rather than as stated by regulatory requirements. Evidence of harmony could be derived by subjecting data extracted from companies' annual reports to tests of statistical significance using, for instance, the chi-square test and indices such as the I-index proposed by Van der Tas. Clearly, the question of how to measure harmonization requires further experimentation and development.

In summary, while there have been a number of empirical studies of comparative international accounting practices, these have been limited in scope. Further, much of the research is now somewhat dated. The main problem, however, is the lack of a comprehensive quantitative analysis of the nature and extent of harmonization in practice both at the present time and over time.

RESEARCH METHODOLOGY

Given that the purpose of this paper is to assess the nature and extent of international accounting harmonization (or reduction in international accounting diversity), how much progress has been made since 1973 when the IASC was established? What have been the major successes and what are the remaining problem areas? Some insights into these questions can be gained from an assessment of the measurement practices of companies based

in countries which are hosts to the world's largest developed stock markets, i.e., France, Germany, Japan, the U.K. and the U.S. This assessment will be made by an examination of key accounting measurement issues as at 1991/92 and a comparison made with the position as at 1971/72. The aim here is to assess progress for a 20-year period starting from just before the IASC came into existence and when international harmonization issues were just beginning to be addressed by them and other agencies such as the OECD and UN. Progress in this context is defined in terms of a reduction in international accounting diversity.

From an initial sample objective of 45 multi-listed and 45 domestic listed industrial companies from each country, the final sample of companies used in the survey comprised a total of 293 companies who were found to be reporting in *both* 1971/72 and 1991/92. The size criterion used was that of sales turnover of at least US $250 million for the 1990/91 financial year. The country breakdown of the final sample was as follows: 25 from France, 42 from Germany, 54 from Japan, 82 from the U.K. and 90 from the U.S. Given the size of these companies and the importance of the countries involved, which are among the largest economies and stock markets in a global context, it would seem reasonable to expect that the impact of efforts to harmonize accounting internationally would be clearly discernible. Indeed, these parameters could be said to provide a favorable test environment given that all of the countries involved are founding members of IASC and strongly committed to the international harmonization objective. A much more severe test of harmonization would be to include all countries comprising membership of the IASC and to survey both large and small companies, listed and unlisted.

Annual Reports for the sample of 293 companies across the five countries were examined in respect of reports published during both of the periods 1971/72 and 1991/92. In general, English language reports were used but in the case of a number of French, German and Japanese reports it was necessary to translate the originals and also obtain advice on interpretation. Accounting measurement issues were assessed relating to choices of method and associated disclosures in each of the following major areas: group accounting and consolidations; goodwill; foreign currency translation; accounting for inventories; property, plant and equipment; depreciation; accounting for investments; accounting for borrowing costs; deferred taxation; extraordinary and exceptional items; research and development expenditures; pensions and retirement benefits; long-term contracts; and government grants. The issues chosen for analysis were based on the measurement issues covered by International Accounting Standards and especially those highlighted by the IASC in its recent comparability project designed to limit the accounting policy choices available (IASC, 1990).

First, an assessment was made of the extent to which changes in measurement and associated disclosure practices over the 20-year period to 1991/92 are significant using the Chi-square (χ^2) test (Siegel and Castellan, 1988) applied to the companies in aggregate.

Second, for each of the accounting measurement practices analyzed, a harmony index was constructed to assess the extent of international accounting harmonization as at both 1971/72 and 1991/92. This index provides a range of values from zero for extreme diversity to 1 for an absolute uniformity of accounting methods. The harmony index used, i.e., the I-index, was a variant of the Herfindahl index, a measure of concentration used by Van der Tas (1988) in his study of accounting harmonization. The general formula for the

index, which includes a correction factor in the case of three or more countries, is stated as follows:

$$\text{I-Index} = [\sum_{i=1}^{n} (f^1 i \times f^2 i \times ... \times f^m i)]\ 1/(m-1)$$

where:

fi = relative frequency of method i in country m

m = number of countries

n = number of alternative accounting methods

The index is computed by multiplying the relative frequency or proportion of use of a particular accounting method across countries and subsequently adding the results for all alternative methods. As a result, the index rises when more companies across countries use the same method from the available accounting options. An example of a simple 2 country/2 method case is as follows:

Country	*1*	2
Accounting method 1	0.7	0.6
Accounting method 2	0.3	0.4
	1.0	1.0

$$\begin{aligned}\text{Harmony index} &= (0.7 \times 0.6 + 0.3 \times 0.4)\\ &= (0.42 + 0.12)\\ &= 0.54\end{aligned}$$

In most cases, the I-index would seem to give a fair impression of the extent and level of accounting harmonization between two or more countries. However, there are some instances when the I-index computation using the formula given above can lead to very misleading results. The following hypothetical case of a 4 country/2 method case vividly illustrates this point.

Country	*1*	2	3	4
Method 1	1.0	1.0	0.0	1.0
Method 2	0.0	0.0	1.0	0.0

$$I = (1.0 \times 1.0 \times 0.0 \times 1.0 + 0.0 \times 0.0 \times 1.0 \times 0.0)^{1/(4-1)} = 0.0^{1/3} = 0/0$$

The I-index score value of zero derived in the above illustration erroneously suggests that there is no degree of harmony whatsoever with respect to the four countries on this particular topic. This misleading result arises due to the fact that all the companies from country 3 adopted method 2 which was not used at all by any of the companies from the other three countries. From this it can be deduced that when the number of countries exceeds two, the practices of one or more of the countries can, in extreme cases, render the I-index score value totally meaningless. Therefore, for the purposes of this study, whenever a situation similar to the one described in the illustration above occurred, no attempt was made to compute the I-index score for that particular topic.

In reviewing the results of the statistical analyses it should be noted that the results derived from the chi-square tests should not be expected to accord with the rankings given

by the I-index computations. For instance it is quite possible that on a particular item the chi-square test might indicate that there are no significant differences between the practices of the companies, whereas the I-index calculation might lead to a relatively low score. The reason for this likelihood is that both tools are intended to measure different concepts of harmonization.

The chi-square test measures the extent to which the preferences of some independent groups are matched. That is, whether or not companies use alternative accounting methods in similar proportions as between countries or between points in time. On the other hand, the I-index measures the extent to which the accounting practices of companies across countries are concentrated around one or more alternatives, i.e., more uniform.

In order to illustrate the above point, assume that on a given accounting topic there are three alternative methods. If an equal proportion of companies used the same alternative methods in each country, then the chi-square test will invariably indicate that there are no significant differences in the accounting practices of the countries concerned over time. On the other hand, the I-index will give a score of 0.33 percent which might relatively speaking be lower (less harmonized) than the score on another topic whose chi-square test result might have indicated that there are significant differences between countries.

RESULTS AND ANALYSIS

The results of the statistical tests and the harmonization analysis are reported in Tables 1 and 2.

In order to assess whether or not there are significant differences between the accounting measurement and associated disclosure practices adopted by the companies as between 1971/72 and 1991/92, 46 tests (17 disclosure-based and 29 policy-based) were conducted. As seen in Table 1, findings based on 36 issues (14 disclosure-based and 22 policy-based), indicate that there are significant differences in the accounting measurement and associated disclosure practices adopted by companies from the five countries in aggregate as between 1971/72 and 1991/92. On ten of the issues, however, no significant differences were observed. Therefore, it would appear from these tests that there is substantial support for the viewpoint that there have been significant changes over the period in respect of the accounting measurement and associated disclosure practices of the companies surveyed.

However, from Table 2 it can be seen that progress in reducing international accounting diversity over the last 20 years has been mixed and, taken overall, quite modest with an increase in the average I-index score from a moderate level of 0.6230 to only 0.6903. This is an average increase in international accounting harmonization of *only* 10.8% from 1971/72 to 1991/92.

The results for the 26 accounting measurement issues indicate that only in the case of 14 issues was there an *increase* in harmonization. In 12 cases there was in fact a *reduction* in harmonization or a higher level of accounting diversity. This would seem to be a situation of one step forward and one step back so far as harmonization is concerned.

Significant *increases* in international accounting harmonization since 1971/72 across the five countries are in respect of consolidation, with a very notable increase of 862.5% from 0.0963 to 0.9269, together with the treatment of exchange differences, the treatment of gains/losses on long-term investments, and the treatment of research and development

Table 1. Assessment of Changes in Measurement and Associated Disclosure Practices from 1971-72 to 1991-92

		Chi-Square Statistic	*Significance*
	Accounting Methods		
1.	Consolidation method	74.773	.0000*
2.	Business combinations (disclosure)	67.426	.0000*
3.	Business combinations (policy)	.712	.3985
4.	Accounting for Associates (policy)	28.026	.0000*
5.	Goodwill (disclosure of policy)	78.228	.0000*
6.	Goodwill (policy)	3.078	.0794
7.	Goodwill (amortisation period)	35.279	.0000*
8.	Foreign Income Statements (disclosure)	71.017	.0000*
9.	Foreign Income Statements: Translation Rate (policy)	57.770	.0000*
10.	Translation Differences (disclosure)	154.165	.0000*
11.	Translation Differences (policy)	1.109	.2922
12.	Foreign Currency Transactions (disclosure)	56.090	.0000*
13.	Foreign Currency Transactions (policy)	10.880	.0124*
14.	Exchange Differences (policy)	39.316	.0000*
15.	Disclosure of inventory valuation policy	27.331	.0000*
16.	Method used to assign cost to inventory	12.211	.0067*
17.	Measurement basis for recording inventory	13.134	.0766
18.	Definition of market value	8.412	.0149*
19.	Disclosure of policy for measuring property, plant and equipment	57.003	.0000*
20.	Cost basis of recording property, plant and equipment	3.816	.0508
21.	Gains or losses on disposal of property, plant and equipment	97.389	.0000*
22.	Disclosure of depreciation policy	79.766	.0000*
23.	Method of accounting for depreciation	19.362	.0007*
24.	Disclosure of policy on Long-term investments	0.114	.7347
25.	Method of valuing long-term investments	10.643	.0011*
26.	Disposal of long-term investments	69.315	.0000*
27.	Disclosure of policy on current investments	6.825	.0090*
28.	Measurement of current investments	19.674	.0002*
29.	Gain/loss on disposal of current investments	22.181	.0000*
30.	Disclosure of policy on borrowing costs	0.006	.9336
31.	Method of accounting for borrowing costs	72.447	.0000*
32.	Disclosure of deferred tax accounting policy	129.758	.0000*
33.	Basis of providing for deferred taxes	64.084	.0000*
34.	Method of treating deferred taxes	4.465	.0346*
35.	Disclosure of policy on extraordinary/exceptional items	1.641	.2001
36.	Treatment of extraordinary/exceptional items	5.899	.0151*
37.	Disclosure of policy on R & D expenditures	31.688	.0000*
38.	Treatment of research expenditures	67.365	.0000*
39.	Treatment of development expenditures	62.145	.0000*
40.	Disclosure of policy on pensions	102.139	.0000*
41.	Determination of cost of pensions	119.196	.0000*
42.	Past service costs/experience adjustments	7.109	.0077*
43.	Disclosure of policy on long-term contracts	22.118	.0000*
44.	Method of accounting for long-term contracts	2.204	.3321
45.	Disclosure of policy on government grants	21.016	.0000*
46.	Method of treating government grants	3.157	.0756

Note: *Significant at the 5% level.

Table 2. International Accounting Harmonization: I-Index and Changes from 1971/72 to 1991/92

		Index 1971/72	*Index 1991/92*	*Index Change*	*% Change*
	Accounting Methods				
1.	Consolidation method	0.0963	0.9269	+0.8306	+862.5
2.	Investments in Associates	0.7784	0.9376	+0.1592	+20.4
3.	Treatment of goodwill	0.6865	0.5441	–0.1424	–20.7
4.	Rate for translating Income Statement of Subsidiaries	0.5417	0.7039	+0.1622	+29.9
5.	Treatment of Translation Differences	0.5377	0.5063	–0.0314	–5.8
6.	Treatment of Exchange Differences	0.2323	0.8136	+0.5813	+250.2
7.	Method used to assign cost to inventories	0.3853	0.2825	–0.1028	–26.7
8.	Measurement basis for recording inventories	0.6781	0.7564	+0.0783	+11.5
9.	Definition of market value	0.6164	0.6990	+0.0826	+13.4
10.	Cost basis for recording property, plant and equipment	0.7629	0.7906	+0.0277	+3.6
11.	Gains/losses on disposal of property, plant and equipment	0.7093	0.9777	+0.2684	+37.8
12.	Method of accounting for depreciation	0.3294	0.2295	–0.0999	–30.3
13.	Method of valuing long-term investments	0.8471	0.6088	–0.2383	–28.1
14.	Gains/losses on disposal of long-term investments	0.5803	0.9889	+0.4986	+85.9
15.	Method of valuing current investments	0.5731	0.7662	+0.1931	+33.7
16.	Gains/losses on disposal of current investments	0.6999	0.9914	+0.2915	+41.6
17.	Method of accounting for borrowing costs	0.9426	0.3843	–0.5583	–59.2
18.	Basis for providing for deferred taxes	0.7732	0.2321	–0.5411	–70.0
19.	Method of treating deferred taxes	0.4005	0.3953	–0.0052	–1.3
20.	Accounting for extra-ordinary and exceptional items	0.9401	0.9950	+0.0549	+5.8
21.	Treatment of research expenditures	0.3592	0.9465	+0.5873	+163.5
22.	Treatment of development expenditures	0.4145	0.9098	+0.4953	+119.5
23.	Determination of the cost of pensions	0.9524	0.4882	–0.4642	–48.7
24.	Treatment of past service costs/experience adjustments	0.9439	0.8501	–0.0938	–9.9
25.	Method of accounting for long-term contracts	0.6670	0.5933	–0.0737	–11.0
26.	Method of treating government grants	0.7500	0.6300	–0.1200	–16.0
	Average I-Index Score	0.6230	0.6903	+0.0673	+10.8

expenditures. It is also noteworthy that there is a relatively high level of harmonization in respect of consolidation method, investments in associates, the treatment of gains/losses on the disposal of property, plant and equipment, the treatment of gains and losses on the disposal of current investments, and accounting for extraordinary and exceptional items.

At the same time, it is noteworthy that there are a number of issues where there have been significant *decreases* in international accounting harmonization since 1971/72 including the treatment of goodwill, the costing of inventories, the method of depreciation, the valuation of long-term investments, the treatment of borrowing costs, the basis for providing for deferred taxes and the method of determining the cost of pensions. Furthermore, it is also noteworthy that there is a relatively low level of harmonization especially in respect of the costing of inventories, accounting for depreciation, and the basis for providing for deferred taxes.

CONCLUSIONS

The results of this empirical study of the accounting measurement methods used by large listed companies in five major countries, i.e., France, Germany, Japan, the U.K. and the

U.S., show that the impact of efforts to reduce international accounting diversity over the 20-year period from 1971/72 to 1991/92 have been, in general terms, quite modest.

While there have been a number of significant changes since 1971/72, it seems that, taken overall, there has been an average increase in harmony of *only* 10.8%. Looking individually at 26 major accounting measurement issues the results are *mixed* with 14 cases showing *increases* in harmonization and 12 cases showing *decreases* in harmonization.

Given there is as yet no accepted benchmark for determining what constitutes a necessary level of harmony for the purposes of comparability, the significance of the I-index scores must remain a matter of judgement. A degree of flexibility, and the use of alternative methods, may well be acceptable. In respect of many measurement issues, however, it seems clear that the problems facing those promoting international accounting harmonization, most notably the IASC, continue to be substantial despite 20 years of effort. Although there has been a significant reduction in accounting diversity in respect of issues such as consolidation, the treatment of associates, and the method of accounting for exchange differences, there has also been an increasing diversity relating to issues such as the treatment of goodwill, accounting for depreciation, the treatment of borrowing costs, accounting for inventories, accounting for deferred taxes, and accounting for pensions.

While these empirical findings indicate areas of change in international accounting harmonization, it has been beyond the scope of this research to explain such changes. Rather the purpose here has been to assess whether change has taken place and, if so, whether or not international accounting diversity has been reduced or increased. This is likely to be of concern to international harmonization agencies and also of interest to the international investment community.

It may be that the IASC's recent Comparability Project (IASC, 1990) and subsequent changes to International Accounting Standards (effective for accounting periods ending on or after 31 December 1995) will reduce the level of international accounting diversity. Given the recent support of the International Organization of Securities Commissions (IOSCO), this may indeed be feasible in the longer term. In the meantime, international accounting harmonization remains a desirable but often elusive goal.

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An Analysis of Multinational "Audit Failures"

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Key Words: Multinational; audit failure; bankruptcy; Big Six; risk factors; going concern.

Abstract: *The shift toward multinational corporations has exposed the auditor to many risks not found on domestic audits, including foreign currency issues, international political risks, international economic risks, greater information asymmetry, and greater complexity. As the client base of the large accounting firms becomes more multinational, it is important to understand whether multinational risk factors are associated with "audit failures." We identified only eight multinational audit failures (multinational client bankruptcy shortly after an unmodified audit opinion) from the period 1988-1992. An examination of these eight failures provided very little evidence that multinational risk factors played any role in the failures.*

Over the past two decades, the multinational corporation has emerged as a major force in the world economy. Many U.S. companies have expanded their operations overseas in order to capitalize on new opportunities.

From the external auditor's perspective, the growth of the multinational company has brought a new bundle of risks not faced on domestic audits, including foreign currency issues, cultural issues, international political and economic risks, greater information asymmetry, and greater complexity. Spagnola and Brannan state,

> the rapid increases in international flows of capital, products, and technologies, and the emergence of the multinational enterprise have complicated organization management and accounting to an unprecedented level (1994, p. 34).

Given the globalization of the business environment, it is important to understand whether the new risks faced on multinational audits are likely to produce a greater number of "audit failures" in coming years. Such failures could be very damaging to the international accounting firms.

The purpose of this exploratory study is to address two questions. First, how many multinational "audit failures" occurred from 1988 through 1992? Second, do the multinational

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"audit failures" identified appear to be due to risks unique to multinational companies? In other words, are these failures caused by multinational factors, or are they simply failures caused by factors that could be found on any domestic audit?

When a client declares bankruptcy soon after the issuance of an unmodified audit opinion, financial statement users often perceive that an audit failure has occurred (Berton, 1985; Berton and Ingersoll, 1985; Campbell and Mutchler, 1988; Carmichael and Pany, 1993). Accordingly, the present study defines audit failures in this manner.

We examined U.S. based public clients of the Big Eight (Six) that declared bankruptcy from 1/1/88 through 12/31/92 and that had in excess of $40 million of revenue (n = 177). Based on a review of each client's financial statement footnotes, only 21 (12%) of the 177 clients had significant multinational operations. Interestingly, of the 21 multinational clients, only eight (38%) had received an unmodified opinion, indicating that multinational audit failures are rare events during this period. In addition, for these eight multinational clients, a review of the business press provided very little evidence that multinational risk factors played any significant role in these failures. Therefore, even the eight "multinational audit failures" did not appear to be caused by risks unique to multinationals. Based on these results, it does not appear that multinational risk factors are associated with a large number of audit failures during the sample period.

BACKGROUND

When a business fails soon after the auditor's issuance of an unmodified opinion, the financial community often perceives that an "audit failure" has occurred (Berton, 1985; Berton and Ingersoll, 1985; Campbell and Mutchler, 1988; Carmichael and Pany, 1993). In such situations, costly litigation against the audit firm may follow (St. Pierre and Anderson, 1984; Palmrose, 1987; Stice, 1993).

We use the public perception described above to define "audit failures" as situations in which a client's bankruptcy is preceded by an unmodified opinion on the client's last financial statements issued before bankruptcy. Consistent with prior studies (Casey, McGee and Stickney, 1986; Menon and Schwartz, 1987), the last audit opinion must fall within 15 months of the bankruptcy date.

We recognize that this definition of audit failure is not perfect; however, this definition is used because it is observable. Business failure and audit failure are not synonymous, and it is possible that one or more situations defined as audit failures in this study are cases in which the auditor had no reasonable chance of detecting the going-concern problem.

A priori, how likely is it that multinational risk factors have resulted in a substantial number of audit failures? Certainly it seems plausible that the greater number of risk factors on multinational audits could produce an increase in audit failures. Auditors facing greater complexity could find it more difficult to detect going-concern problems. In addition, multinational clients generally are larger than domestic clients. The auditor may be less inclined to modify the opinion of a distressed multinational client: McKeown, Mutchler and Hopwood (1991) found that larger distressed clients are less likely to receive modified opinions than are smaller distressed clients.

Conversely, one other study may suggest that multinational audit failures are not very common. Hermanson (1993) found that Big Six multinational auditing experts generally

focused on non-multinational risk factors as they set the audit scope on multinational audits (planning which locations to visit and what procedures to perform). The risk factors rated as most important by the experts were unusual transactions, subsidiary size, and client expectations. These factors are all common to domestic audits as well.

Since these experts did not focus on multinational risk factors as they planned multinational audits, it seems unlikely that the Big Eight/Six firms have experienced many audit failures caused by multinational risk factors. If the firms had been "burned" by multinational risk factors, one would expect them to pay close attention to such factors as they planned their audits.

Given the exploratory nature of this study and the competing arguments above, no hypotheses are formulated. Rather we simply gather evidence on the number of multinational audit failures and the apparent causes of the failures.

RESULTS

Sample Selection

The sample was identified in the following manner. *Predicasts' F&S Index of Corporate Change* was used to identify company bankruptcy filings from 1/1/88 through 12/31/92. We referred to the *Directory of Companies Required to File Annual Reports with the SEC* to identify the public companies. Each public company's last annual report before bankruptcy was consulted to gather the auditor name, audit opinion, and financial variables. Consistent with previous research (Casey et al., 1986; Menon and Schwartz, 1987), the last audit opinion had to be issued within 15 months of the bankruptcy date. In a few cases, the most recent annual report was not available, and the prior year report was used (as long as the audit opinion was issued within 15 months of the bankruptcy date).

As shown in Table 1, the process above yielded 177 Big Eight/Six public clients with revenues of at least $40 million that declared bankruptcy from 1/1/88 through 12/31/92. The $40 million threshold was judgmentally set to ensure that the companies in the sample were of reasonable size, so that any multinationals identified would be substantial companies.

The following screens reduce the sample size. First, the financial statement footnotes of each of the 177 companies were consulted to determine whether the companies had mate-

Table 1. Data Screens

Big Eight/Six Public Clients with Revenues of at Least $40 Million that Declared Bankruptcy from 1/1/88 through 12/31/92	177
Less: Clients Without Material Multinational Operations	–156
Bankrupt Clients With Material Multinational Operations	21
Less: Clients Receiving Modified Opinions	–13
Multinational "Audit Failures"	8

rial multinational (foreign) operations. Public companies must disclose foreign operations information,

> if revenue from foreign operations is 10 percent or more of the combined revenue of all segments of the entity, or if identifiable assets of the entity's foreign operations are 10 percent or more of the combined identifiable assets of the entity (Dyckman, Dukes and Davis, 1995, p. 1312).

A large portion of the initial sample (156 companies, 88% of initial sample) did not present a footnote on foreign operations. Therefore, these companies were excluded from the sample. Of the remaining 21 "multinational clients," 13 received modified opinions on their last financial statements before bankruptcy. Subtracting these 13 clients leaves eight "multinational audit failures," multinational clients that declared bankruptcy after receiving an unmodified audit opinion.

Based on these data screens, the answer to the first research question is apparent. Multinational audit failures are relatively rare during the sample period. The Big Eight/Six firms experienced only eight multinational audit failures over the five-year period. In addition, of the 21 multinationals that declared bankruptcy, 13 (62%) received modified opinions. While the small sample size prohibits drawing any definitive conclusions, this 62% figure is higher than the 50% modification rate typically found for bankrupt U.S. companies in general (e.g., Altman and McGough, 1974; Menon and Schwartz, 1986).

Descriptive Statistics

Table 2 presents descriptive statistics on the 21 multinational bankruptcies, partitioned by those clients receiving modified opinions and those clients receiving unmodified opinions. Despite the very small sample sizes, it appears that the audit failure clients may be slightly smaller, have smaller losses, and have a greater percentage of their operations overseas. The smaller losses could make it more difficult for the auditor to detect a going-concern problem, and the greater percentage of overseas operations could increase the complexity of these audits.

Multinational Audit Failures

This section presents a brief "case study" analysis of each of the eight multinational audit failures. The analysis is based on a review of the business press around the time of each company's bankruptcy filing. The purpose of the analysis is to determine whether

Table 2. Variable Medians ($ in thousands)

Variable	*(n = 13)* *Modified Multinational Clients*	*(n = 18)* *Multinational "Audit Failures"*
Assets	$298,883	$203,106
Revenues	$337,547	$199,325
Net Income	–$137,069	–$26,945
% of Foreign Assets	15.7%	30.3%
% of Foreign Revenues	15.5%	40.8%

any evidence suggests that multinational risk factors may have led to these bankruptcies. Note that the business press focuses on the causes of the *business* failure (i.e., why did the company go bankrupt). We can only assume that these same factors are the cause of the *audit* failure, for we have no access to the audit workpapers or to the decision process used by the auditors. Please refer to Table 3 for a summary of each of the failures.

Aancor Holdings, Inc. Aancor Holdings Inc. (Aancor) was the parent company of National Gypsum Co., a wallboard manufacturer. Aancor declared bankruptcy in October of 1990. The company was quite large, with assets and revenues each near $1.5 billion. Approximately 7% of the company's assets and 12% of its revenues were foreign.

Aancor declared bankruptcy after Citibank refused to renew its line of credit. In addition,

> other potential lenders were frightened away by declining prices for wallboard, fears that the construction market was turning softer, and concerns about National Gypsum's asbestos-liability lawsuits (*WSJ*, Oct. 30, 1990, p. A12).

Wallboard prices had dropped from $125 per 1,000 square feet in 1986 to $80 in 1990. The company had been involved in asbestos litigation for many years. In addition, the company had a large debt load from its 1986 leveraged buyout (*WSJ*, Oct. 30, 1990).

Based on this information, it does not appear that Aancor's failure was caused by multinational risk factors. The company simply failed because of industry conditions, litigation, and high leverage.

Alliant Computer Systems Corp. Alliant Computer Systems Corp. (Alliant) was a small manufacturer of mini-supercomputers. Alliant declared bankruptcy in May of 1992. The company had assets and revenues of approximately $40 million each. Foreign operations accounted for 35% of assets and 38% of revenues.

According to the *Wall Street Journal*,

> ... [Alliant's] problems were attributed to technical difficulties in making a transition from its traditional supercomputers to a new line of computers using a 'massively parallel' design (*WSJ*, May 27, 1992, p. B4).

The company had suffered losses because the market for mini-supercomputers "was eclipsed by increasingly powerful workstations" (p. B4).

Overall it appears that Alliant failed to keep up with market shifts and then had problems changing its product line. These factors are not multinational in nature.

Basix Corp. Basix Corp. (Basix) was a diversified company with operations in oil drilling, toll systems, printing, computer leasing, traffic control systems, power line construction, and security systems (Giltenan, 1989). Basix declared bankruptcy in February of 1988. The company had assets and revenues of approximately $200 million each. As of 1986, only about 5% of the company's operations were foreign (the company was above the 10% threshold in earlier years).

Basix faced a number of setbacks from 1985 through 1987. Oil prices fell in 1985, and the company sold its drilling subsidiary at a loss. The next year Basix "had to take a $21 million writedown on its offshore oil reserves in Greece" (Giltenan, 1989, p. 70).

In 1986, the printing business was cut in half by changes in the municipal bond industry. In addition, the printing operation's spending was not controlled effectively. Finally, the toll business and traffic control operations experienced significant problems. One director

Table 3. Description of Multinational "Audit Failures"

Aancor Holdings (National Gypsum Co.)	
Bankruptcy Date	10/90
Last Financial Statements	12/31/89
Assets (000s)	$1,458,325
Revenues (000s)	$1,364,070
Net Income (000s)	–$40,330
% Foreign Assets	7%
% Foreign Revenues	12%
SIC Code	3270
Primary cause of bankruptcy: Falling price of wall board; weak construction market; asbestos litigation; lack of financing.	
Alliant Computer Systems Corp.	
Bankruptcy Date	5/92
Last Financial Statements	12/31/91
Assets (000s)	$40,739
Revenues (000s)	$43,824
Net Income (000s)	–$9,483
% Foreign Assets	35%
% Foreign Revenues	38%
SIC Code	3571
Primary cause of bankruptcy: Shift away from mini-supercomputers; technical problems with new market.	
Basix Corp.	
Bankruptcy Date	2/88
Last Financial Statements	12/31/86
Assets (000s)	$224,598
Revenues (000s)	$175,532
Net Income (000s)	–$13,559
% Foreign Assets	4%
% Foreign Revenues	6%
SIC Code	2750
Primary cause of bankruptcy: Lack of control; lack of synergy; oil price drop; problems in several industries.	
D.R. Holdings (Prime Computer)	
Bankruptcy Date	8/92
Last Financial Statements	12/31/91
Assets (000s)	$1,149,563
Revenues (000s)	$1,382,444
Net Income (000s)	–$537,926
% Foreign Assets	66%
% Foreign Revenues	62%
SIC Code	7373
Primary cause of bankruptcy: Collapse of minicomputer market; high leverage.	

Floating Point Systems Inc.	
Bankruptcy Date	10/91
Last Financial Statements	10/31/90
Assets (000s)	$62,273
Revenues (000s)	$46,886
Net Income (000s)	–$9,202
% Foreign Assets	18%
% Foreign Revenues	49%
SIC Code	3571

Primary cause of bankruptcy:
Declining sales of attached processors and mini-supercomputers; engineering and testing problems; other market factors.

Siliconix Inc.	
Bankruptcy Date	4/90
Last Financial Statements	12/31/88
Assets (000s)	$157,125
Revenues (000s)	$128,526
Net Income (000s)	$1,221
% Foreign Assets	41%
% Foreign Revenues	43%
SIC Code	3674

Primary cause of bankruptcy:
Unfavorable patent infringement verdict.

TIE Communications Inc.	
Bankruptcy Date	4/91
Last Financial Statements	12/31/89
Assets (000s)	$181,614
Revenues (000s)	$223,118
Net Income (000s)	–$69,825
% Foreign Assets	25%
% Foreign Revenues	32%
SIC Code	3661

Primary cause of bankruptcy:
Management issues; heavy debt load; filed prepackaged bankruptcy plan; emerged from bankruptcy after three months.

Wang Laboratories Inc.	
Bankruptcy Date	8/92
Last Financial Statements	6/30/91
Assets (000s)	$1,417,900
Revenues (000s)	$2,091,500
Net Income (000s)	–$385,500
% Foreign Assets	48%
% Foreign Revenues	55%
SIC Code	3570

Primary cause of bankruptcy:
Collapse of minicomputer market; product development issues; management team problems.

of the company described the situation: "It was like Murphy's Law. If something could go wrong, it did" (p. 71). In summary, Giltenan writes:

> What is the lesson in this sad story? Beldock [the company founder] likes to think Basix was the victim of circumstance--falling oil prices, an untrustworthy manager or two, congressional inability to follow through on road rebuilding, and so on. There is some truth in that, but it's not particularly relevant. More acute is a former Basix director who says: "There wasn't any synergy in the various companies. Everybody was an entrepreneur, and there weren't the proper controls from Beldock" (Giltenan, 1989, p. 71).

Based on the information above, it does not appear that multinational risk factors played a major role in the Basix failure. The only multinational factor cited above was the oil reserves in Greece ($21 million), but this loss would have occurred regardless of where the oil was located because oil prices fell worldwide.

D.R. Holdings (Prime Computer). D.R. Holdings owned Prime Computer, a large manufacturer of minicomputers. D.R. Holdings declared bankruptcy in August of 1992. The company was quite large, with assets and revenues each in excess of $1 billion. Over 60% of the company's assets and revenues were foreign.

Prime Computer faced two problems, over $1 billion of debt and plummeting sales of minicomputers. "Prime has been hurt by business' rapid switch from minis to desktop workstations" (McWilliams, 1991, p. 98). An earlier article by Sivula (1990) discussed Prime Computer's lack of new products, a major problem in a fast-changing market. Ultimately Prime was unable to maintain its market share, and the company failed.

Although the majority of its operations were foreign, it does not appear that multinational risk factors account for the failure of D.R. Holdings. The company was not able to survive the decline of the minicomputer industry.

Floating Point Systems Inc. Floating Point Systems Inc. (Floating Point) was a small manufacturer of mini-supercomputers. Floating Point declared bankruptcy in October of 1991. The company had assets of approximately $60 million and revenues of approximately $45 million. The company's assets were 18% foreign, while 49% of its revenues were foreign.

Floating Point "had increasing difficulty finding a market for its outmoded processors and has been plagued with troubles in engineering and deploying new products" (*WSJ*, October 8, 1991). Earlier *WSJ* articles cited problems with new products and shipping delays (July 22, 1991), as well as competition, economic conditions, and reduced demand in Europe (June 11, 1991).

Overall this failure is nearly identical to Alliant. Neither company could survive the decline of the mini-supercomputer market, for they could not introduce new products quickly enough. Other than the role of European demand, it does not appear that multinational risk factors played a major part in this failure.

Siliconix Inc. Siliconix Inc. was a manufacturer of semiconductor products. The company declared bankruptcy in April of 1990. Siliconix had assets of approximately $160 million and revenues of approximately $130 million. Over 40% of the company's assets and revenues were foreign.

Siliconix filed for bankruptcy "partly because of an unfavorable verdict in a patent infringement suit" (*WSJ*, April 12, 1990, p. A2). The lawsuit was filed by International Rectifier Corp. and had been in process for several years. The two companies subsequently agreed that Siliconix would pay $12 million over two years and would pay

royalties to International Rectifier (*WSJ*, May 22, 1990). At the time of the bankruptcy filing, the company also was in technical default on some of its debt.

The primary cause of this failure was the unfavorable patent infringement verdict. No multinational risk factors were cited.

TIE Communications Inc. TIE Communications Inc. (TIE) was a manufacturer of telephone systems for small offices. The company filed for bankruptcy in April of 1991. TIE had assets of approximately $180 million and revenues of approximately $220 million. Approximately 30% of the company's business was foreign.

TIE entered a prepackaged bankruptcy plan in which it traded stock for the debt held by its largest creditor (*WSJ*, April 9, 1991). According to an investor seeking control of the company, TIE's major problems were "ineffective management and a crushing debt load" (*WSJ*, March 27, 1991, p. A5). Shortly after the bankruptcy filing, the company sold its equipment distribution channels to a Japanese firm, and the company emerged from bankruptcy after three months (*WSJ*, July 3, 1991). TIE's bankruptcy was short-lived, and there is no evidence that multinational risk factors played any role in this failure.

Wang Laboratories Inc. Wang Laboratories Inc. (Wang) was a large producer of computers. The company filed for bankruptcy in August of 1992. Wang had assets and revenues in excess of $1.4 billion. Approximately 50% of the company's operations were foreign.

> Wang . . . revolutionized offices around the world with its minicomputers. But as the industry began to shift to personal computers in the mid-1980s, Wang was left behind (Miller and Rosenberg, 1992, p. 72).

Another factor was Mr. Wang's choosing his son to succeed him in the business:

> The inexperienced Fred [son of the founder] failed to spruce up the firm's product line and loaded its balance sheet with almost $1 billion of debt (*The Economist*, August 22, 1992, p. 58).

One consultant concluded,

> [Wang] fell prey to the enormous success of the PC. They simply did not react fast enough to compete in the workplace (Miller and Rosenberg, 1992, p. 72).

Wang's failure appears quite similar to that of D.R. Holdings. The company did not survive the fall of the minicomputer market. The only discussion of any multinational factor was the sale of Wang Austria, a small, unprofitable foreign subsidiary (*WSJ*, Sept. 1, 1992). This multinational factor appears quite minor in the overall failure.

DISCUSSION AND CONCLUSION

The results above suggest the following. First, multinational audit failures appear to be quite rare during the sample period, with only eight in the five-year period. Moreover, only three of the eight failures involved very large companies. Aancor, D.R. Holdings, and Wang were the only multinational audit failures with revenues in excess of $1 billion.

Second, the majority (62%) of the bankrupt multinational clients received modified opinions. Therefore, the Big Eight/Six as a group generally provided early warning of multinational bankruptcies.

Finally, a "case study" analysis of the eight multinational audit failures suggests that multinational risk factors did not play a major role in any of the failures. Articles discussing Basix, Floating Point, and Wang mentioned multinational factors, but these factors did not appear to be primary causes of the failures.

Based on the results found in this one context, it does not appear that multinational auditing is inherently different than domestic auditing. The factors that lead multinationals to fail appear to be the same types of factors that destroy domestic companies--primarily adverse market conditions, high debt, product development problems, litigation, and poor planning.

We encourage researchers to further explore the issues of multinational audit failures and multinational auditing in general. The present study is exploratory, has a very small sample size, relies heavily on the business press, and is purely descriptive in nature. This area of research is in its infancy, and a great number of multinational auditing issues deserve our attention. The central question to examine is how the auditing profession will be affected by the globalization of the economy.

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Environmental Disclosures in Annual Reports: An International Perspective

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Key Words: Environmental disclosures; environmental reporting; reporting of environmental violations

Abstract: *This study investigates the annual report disclosures of environmental information for 276 companies representing nine broadly defined industries and 27 countries for the years 1989 through 1991. Our principal findings are: (1) there is a statistically significant difference between the 1989 and 1990 individual and overall disclosures; (2) there is a statistically significant negative difference between the 1990 and 1991 individual and overall disclosures; (3) the United States provided the highest percentage of companies reporting environmental information; and (4) the British-American accounting model produced the highest percentage of companies employing the different environmental disclosure forms.*

Environmental safety and protection issues have once again become a major concern. The 1990s have revitalized an interest in environmental issues which rivals that of the 1970s. "What began as a grassroots effort is quickly becoming a mainstream issue of concern to consumers, investors, politicians, and businesspeople alike" (Millstone and Watts, 1992). The focus of these issues includes such items as movement of waste, vehicle emissions, protecting the ozone layer, hazardous waste incinerators, trade in endangered species, and climate change.

This revitalization of interest in the environment has not been isolated in a particular region of the earth, but the 1990s have ushered in an era in which the environmental movement has drawn attention at a global level. This worldwide concern for environmental issues and the emerging emphasis on globalization translate into an important externality for corporate entities—the global production (including waste management) and marketing of goods from an environmentally sensitive perspective.

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In response to the above concerns, environmental legislation has expanded environmental programs to the extent that cleanup and compliance costs have created a permanent shift in the way in which enterprises operate. In other words, environmental cost and concerns are now major ingredients in an enterprise's investment decision model. Furthermore, because of this elevated status of importance, the appropriate financial reporting of environmental costs and concerns must also be addressed. Additionally, of equal importance is the ability of entities to produce products in an environmentally sustainable manner, i.e., the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs. Therefore, given the global interest in environmental issues, harmonization of environmental disclosure policies and guidelines is a major task facing those entities (i.e., governmental agencies, business industries, and environmental groups) who seek to participate in global manufacturing, sales, and capital markets.

The objectives of the paper are to determine: (1) if, on an international level, there is a significant difference in the type and level of environmental disclosure form over the three year time period investigated; (2) the most significant form of environmental disclosure for the companies representing the sample countries over the test period; (3) if there is a significant difference in the level and type of disclosure forms for companies located in the European Economic Community (EEC), United States (U.S.), and other countries; and (4) if there is a significant difference in the level and type of disclosure form for companies employing different accounting models. These objectives are important because they will provide insight into whether or not, on a global basis, there are significant differences in the level and type of environmental disclosures, which countries are providing what type of disclosure form to stakeholders, and if the disclosure form employed is a function of the accounting model employed. Thus, policy makers are provided with information that can be used to determine environmental reporting policy.

PRIOR RESEARCH

Committee reports and research studies by the American Accounting Association (AAA, 1971-1975, 1978), the National Association of Accountants (NAA, 1974), the American Institute of Certified Public Accountants (AICPA 1973, 1976), and the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR) have all addressed the environmental reporting issue and concluded (based on different objectives) that environmental disclosures are important to both internal and external users. With regard to internal users, the results from several surveys indicate that many corporate managers are aware of the environment disclosure issue and have voluntarily responded to the demands for disclosure of environmental reporting (Wiseman, 1982). Furthermore, the most recent United Nations survey of transnational corporations indicated that 86% of the 222 firms surveyed provided some form of environmental disclosure in their 1990 financial statements (United Nations, 1992). For the most part, the remainder of the research conducted on environmental disclosures may be categorized into either investor use or reliability. Presented below is a discussion of the research findings from studies focusing on investors' use of environmental disclosures and the reliability of environmental disclosures, respectively.

The research conducted on the usefulness of environmental or social disclosures to investors has produced mixed results. For example, Buzby and Falk (1979) surveyed mutual fund presidents and found that a substantial number of funds considered some social items, eg, involvement in improper or illegal business or political practices, pollution of the environment, and the sale of products which are potentially hazardous, in their investment decision process. However, the relative importance of most of the social items investigated was lower than any of the six standard financial items included in the survey. Rockness and Williams' (1988) survey of socially responsible mutual fund managers also failed to identify a strong demand for specific social disclosures. Further, the most frequently used source of social information was that provided by the firms themselves. On the other hand, in a broader based survey (religious organizations, universities, foundations, insurance companies, banks and mutual funds) Longstreth and Rosenbloom (1973) found that the majority of those responding took social considerations into account in the selection and retention of investments.

The research investigating the quality of environmental disclosures indicate that its quality is poor and that there is a lack of consistent information disclosure regarding the environmental expenditures and liabilities of enterprises operating in sectors with significant environmental impacts (United Nations, 1992). For example, only a few of the Canadian companies surveyed by Hawkshaw (1991) described how they account for environmental costs. Furthermore, of the 222 transnational corporations surveyed by the United Nations (1992), only seven disclosed the extent of their environmental liabilities. Finally, in a study of 100 environmental reports prepared in 1992-93 by companies from 15 industry sectors worldwide, only five came close to providing effective, useful data (Roberts, 1994).

With regard to market based research, Belkaoui (1976) found that the market reacted differentially to those firms that disclosed pollution control information than to those that did not disclose. Further, Anderson and Frankle (1980) found that socially disclosing firms outperformed non-socially disclosing firms, that portfolios that disclosed social information for two continuous years outperformed portfolios that disclosed social information for only one year, and that financial information on a temporary basis (for one month out of twelve) had a more favorable market reaction than nonfinancial information. Ingram (1978) used an improved version of the methodology employed by Anderson and Frankle and controlled for industry, the sign of firms' excess earnings in the year of disclosure, and the year the disclosure was made. With these additional variables he found that the information content of social responsibility disclosures varied across firms. More specifically, information content was conditioned on the market segment (identified by firm-specific characteristics) rather than on a general cross-section of firms.

Shane and Spicer (1983) investigated whether security price movements were associated with the release of externally produced information about pollution control performance. The results indicated that the externally-produced disclosures had information content. Finally, Freedman and Jaggi (1986) found no significant difference between investor reaction to extensive pollution disclosures and investor reaction to minimal pollution disclosures.

In terms of research investigating the reliability of social disclosures, Rockness (1985) explored whether firms' annual report disclosures are reliable measures of social performance. It was found that regardless of the subject's background (financial analysts,

member of environmental protection organizations, environmental regulators, or MBA students) there was little difference in their judgments about firms' environmental performance from voluntary annual report disclosures. Furthermore, Rockness also found that although subjects made consistent rankings, they were not accurate judgments of firm performance. This finding supports earlier studies by Ingram and Frazier (1980) and Wiseman (1982).

Freedman and Wasley (1990) also investigated the relationship between actual firm environmental performance and environmental AR and 10K disclosures. They explored this relationship for firms from four highly polluting industries: steel, oil, electric utilities, and paper and pulp. Their results showed that AR disclosures were only significantly correlated with external pollution control indices in the oil industry. This finding is consistent with previous research which has failed to clearly document an association between firm annual report environmental disclosures and externally produced pollution performance indices.

SYNOPSIS OF INTERNATIONAL ENVIRONMENTAL REPORTING REQUIREMENTS

This section of the paper presents a review of environmental disclosure requirements for the countries of those companies included in the study.

Australia. Standard setters (the Australian Accounting Standards Board (AASB) and the Public Sector Accounting Standards) have not issued any specific standards or guidance on environmental accounting and disclosure. Similar to the U.S.A. at a generic level, the issue of liability recognition is dealt with in the Statement of Accounting Concepts (SAC) 4, *Definition and Recognition of the Elements of Financial Statements* (AASB, 1995), and the issue of the disclosure of relevant and reliable information is dealt with in SAC 3, *Qualitative Characteristics of Financial Information* (AASB, 1990).

Belgium. There are no specific environmental disclosure and/or reporting requirements.

Canada. The Canadian Institute of Chartered Accountants (CICA, 1994), in *Accounting Recommendations Section 3060,* states that provisions are needed to accrue the liability for future removal and site restoration costs when the likelihood of their incurrence is established as a result of environmental law or because the enterprise has established a policy to restore a site and when such costs can be reasonably determined. Provisions are recorded as liabilities and are not classified with accumulated amortization. When future removal and site restoration costs (which include costs, net of expected recoveries, for dismantling and abandoning) for a property cannot be reasonably determined, a contingent liability may exist. A change in the law or environment affecting the extent to which the carrying amount can be recovered is a condition that may indicate that a write-down of a capital asset is appropriate.

Denmark. The Institute of State Authorised Public Accountants (FSR) established a task force which addressed the practical implications of implementing the European Economic Community regulations on environmental auditing. In December 1992, an exposure draft was issued on a proposed standard concerning disclosure requirements on environmental matters and a description of environmental issues. Some of the environmental issues discussed are information on possible investments in environmental

improvements, environmental regulations and environmental policies of the company. The final draft of the standard is under development and should be out in the near future (European Federation of Accountants, 1993).

European Economic Community. *Council Regulation (European Economic Community,* 1992*) No. 1836/93* states that the objectives and principles of the Community's environmental policy call for voluntarily participating companies to establish and implement environmental policies, objectives and programs, and an effective environmental management system. Further, an environmental statement shall be prepared and include the following:

(a) a description of the company's activities at the site considered
(b) an assessment of all the significant environmental issues of relevance to the activities concerned
(c) a summary of the figures on pollutant emissions, waste generation, consumption of raw material, energy and water, noise and other significant environmental aspects, as appropriate
(d) other factors regarding environmental performance
(e) a presentation of the company's environmental policy, program and management system implemented at the site considered
(f) the deadline set for submission of the next statement, and
(g) the name of the accredited environmental verifier.

Finland. Companies follow the regulations and laws related to environmental protection. Environmental issues can be addressed in a separate section and/or as part of the directors' report (European Federation of Accountants, 1993).

France. No specific reporting requirements for environmental concerns.

Germany. The German Institute (IDW) has two working committees. One is considering environmental liabilities and the other, the impact of actions for the protection of the environment on financial reporting and taxes. However, the German standard setting body has not issued any environmental accounting standards (European Federation of Accountants, 1993).

India. Section 217 (1)(e) of the *Companies Act*, 1956 requires that every company shall, in the report of its board of directors, include the following information:

A. Conservation of energy:
   (a) energy conservation measures
   (b) any additional investments and proposals being implemented for the reduction of energy consumption
   (c) impact of the measures at (a) and (b) above, for the reduction of energy consumption and the consequent impact on the cost of production of goods
   (d) total energy consumption and energy consumption per unit of production

B. Technology absorption:
   (e) efforts made in technology absorption.

Italy. Larger companies report on environmental issues in the form of a special report (European Federation of Accountants, 1993).

Japan. No specific reporting requirements for environmental concerns.

Luxemburg. No specific reporting requirements for environmental concerns.

New Zealand. No specific reporting requirements for environmental concerns.

Netherlands. The Dutch Institute has not issued specific environmental reporting requirements. However, the Limperg Institute, an independent accounting research body co-sponsored by the Dutch Institute, discusses the following two environmental reporting issues in a report entitled, *The Environment and the Audit Profession*: (1) the reporting of environmental costs in financial statements, and (2) the desirability of producing environmental reports for third parties. The report recommends that companies properly and fully account for damages which they cause to the environment during the year. It is further suggested to include a provision in the balance sheet for the expected cost of cleaning up contaminated soil and similar environmental problems when the amounts are quantifiable (European Federation of Accountants, 1993).

Norway. The Norwegian Joint Stock Companies Act requires that certain environmental information be disclosed in the annual report. Specifically, Section 11-12 contains the following disclosure requirement:

> If the company has more than 10 employees, the annual report shall describe the working conditions, and review the measures that have been implemented in this field. The annual report shall also state whether the business pollutes the external environment, and review any measures that have been implemented or are being planned to counteract such pollution.

Further, because of tax regulations, companies must ensure that investments undertaken to improve the environment or to counteract pollution have not been capitalized but have been charged as an expense (European Federation of Accountants, 1993).

Republic of China. No specific reporting requirements for environmental concerns.

South Africa. No specific reporting requirements for environmental concerns.

Spain. No specific reporting requirements for environmental concerns.

Sweden. No specific reporting requirements for environmental concerns.

Switzerland. The Foundation for Accounting and Reporting Recommendations (FARR) is currently studying environmental accounting issues. Its study on environmental accounting issues is being influenced by the Swedish Environmental Legislation Booklet 1, *Environmentally Hazardous Activities and Liability for Environmental Damages*, and current practice. Presently, some companies, in their annual report, provide information on expenditures and investments associated with environmental protection, safety and product safety.

United Kingdom. Presently, the Accounting Standards Board (ASB) is not developing standards specifically for environmental accounting. However, they do encourage larger companies to include operating and financial review (OFR) in annual reports to discuss main factors (e.g., environmental protection and potential environmental liabilities) underlying statements.

Professional bodies, academic researchers, and other groups are encouraging greater disclosure. These groups include:

1. The Chartered Association of Certified Accountants (CACA). An annual *Environmental Reporting Award Scheme* was started in 1991. The major objectives of the scheme are to:

(a) identify and reward innovative attempts to communicate environmental performance by providing a framework for environmental reporting, (b) show the business world which companies are providing environmental information, and (c) give those companies who do not, an opportunity to assess the benefits which can be gained by doing so.

2. The Environmental Research Group of the Institute of Chartered Accountants (England and Wales). Their report urges greater disclosure of environmental issues particularly where environmental factors will have an impact on a company's policy and activities or affect its asset values or liabilities. The report also recommends a list of items which should be published by companies as part of their annual reporting cycle. These include the company's environmental policy; its environmental objectives which should be expressed in such a way that enables performance to be measured; key impacts of the business on the environment; and information on actions taken in pursuit of specified environmental objectives (Department of Environment, 1991).

3. The finance directors of the largest 100 companies in the U.K. issued a Statement which encourages all companies to reach a minimum standard of financial reporting. This statement of good practice seeks to provide a benchmark standard for environmental reporting.

United States. To date, the FASB has provided little direction for corporate disclosure of environmental matters. The only rules addressing environmental disclosure focus on issues of capitalization or expensing of environmental outlays and contingent liabilities. On the environmental outlays issue, the FASB's Emerging Issues Task Force (EITF) has released three *Issue Statements* on the treatment of costs incurred for environmental purposes. *Issue No. 90-8, Capitalization of Costs to Treat Environmental Contamination* (FASB, 1991) primarily recommends expensing the cost of contamination treatment. However, capitalization is permitted if the costs: (a) extend the asset's life, increase its capacity, or improve its efficiency relative to the property's condition when originally constructed or acquired; (b) mitigate or prevent future contamination; or (c) are incurred in preparing the property for sale. Further, costs are capitalized to the extent of recoverability. *Issue No. 89-13, Accounting for the Cost of Asbestos Removal* (FASB, 1991), recommends the capitalization of costs incurred to treat asbestos as long as they are experienced within a reasonable time frame after the acquisition of property with a known asbestos problem. *Issue No. 93-5, Accounting for Environmental Liabilities* (FASB, 1995), calls for an environmental liability to be evaluated independently from any potential claim for recovery and the loss arising from the recognition of an environmental liability to be reduced only when a claim for recovery is probable of realization. Further, discounting environmental liabilities for a specific clean-up site is allowed, but not required, if the aggregate amount of the obligation and the amount and timing of the cash payments for that site are fixed or reliably determinable.

Guidance for contingency accounting is provided by FASB *Statement No. 5, Accounting for Contingencies* (FASB, 1975), according to which a loss contingency should be recognized as a loss if (a) it is probable that a liability has been incurred or an asset impaired, and (b) the amount of the liability or the impairment can be reasonably estimated. With regard to the measurement of a contingent loss, FASB *Interpretation No. 14, Reasonable Estimation of the Amount of a Loss* (FASB, 1976), states that when the reasonable estimate of a loss is a range and no amount within the range is a better estimate than another, the minimum amount should be accrued.

Data and Method

With respect to the sample data, 276 companies representing nine broadly defined industries and 27 countries were selected for inclusion in the study.[1] The industries selected were metals, petroleum, mining, motors, chemicals, forestry, electronics, pharmaceutical, soap & cosmetics, and rubber. Non-U.S. companies were selected from *Fortune Global 500 Companies* and U.S. companies were selected from *Standard and Poor's Compustat Services.*[2] The selection of the sampled companies was subjective and based upon the following criteria: (1) their production process(es), transportation, storage, and/or waste disposal process(es), which, if not handled properly, could potentially have a negative impact on the environment, and (2) they were not regulated. Content analysis was used to collect environmental disclosure data. Content analysis is a research method for making replicable and valid inferences from data to their context (Krippendorff, 1980). The specific type of content analysis employed is referred to as semantical content analysis, which has been defined by Krippendorff as a method which classifies signs according to their meanings, e.g., counting the number of times a company has been cited for an environmental violation.

Environmental disclosure data were collected from annual reports (ARs) from 1989 through 1991. The year 1989 was selected as the base year because it was the year in which the Valdez oil spill occurred. The Valdez oil spill is used as the benchmark year because it is the authors' opinion that it marks the beginning of increased world awareness of catastrophic environmental acts of corporations and society's willingness to hold them accountable for such action(s). Data collected from ARs were coded according to the coding scheme in Figure 1. The codes were developed based upon the following procedure: the authors read the first year of AR information and independently derived codes and an evaluation of the disclosures. Then, a meeting was held to discuss independent evaluations and to produce a common coding scheme. Thus, the final coding scheme was developed based upon environmental information reported in ARs, and mandatory environmental disclosure requirements.

In terms of interpreting the coding scheme, the reader should note that short quantitative discussion (SQD) includes information regarding environmental policy, legal compliance and restrictions, changes in environmental regulations, operating and capital environmental expenditures, and the effect of environmental matters on other aspects of operations. On the other hand, extended quantitative discussion (EQD) includes SQD as well as information regarding plans for environmental improvements in operations, the total dollar amount committed to such plans, the dollar amount spent to date, the dollar amount expected to be spent in each of the next five years, the types of environmentally-oriented assets that have and/or will be acquired, and the results of an environmental audit. Four examples of EQDs, from U.S. and non-U.S. firms annual reports, are presented in the Appendix.

ANALYSIS OF DATA

Table 1 contains the percentage of companies employing each disclosure form for each year. SQD has the highest percentage on an individual year and overall basis, followed by

Code	Description
SQD	Short qualitative discussion (not in the footnotes and less than a page)
EQD	Extended qualitative discussion (not in the footnotes and a page or more)
FN	Footnote discussion
JE	Journal entry recorded in financial statements
	Firm has been cited for environmental violations and/or is conducting remediation efforts at one or more sites and:
V1	Associated costs are significant.
V2	Company believes associated costs will not be significant or will not have a material adverse effect on the financial statements.
V3	Liability or associated costs cannot be estimated.

Figure 1. Annual Report Environmental Disclosure Codes

EQD, and footnote (FN) disclosure. The highest average disclosure per firm occurred in 1991. The test for statistical significance differences across the sample period for each disclosure form is presented in Table 2. Except for SQD and EQD, there is a statistically significant difference (at $\alpha = 0.05$) between the 1989 and 1990 individual and overall disclosures. However, none of the differences between the 1989 and 1991 individual and aggregate disclosures are statistically significant. Finally, except for SQD, all of the differences between individual and aggregate 1990 and 1991 disclosures are significant.

Tables 3 through 8 provide insight into disclosure patterns on a country and year basis.[3] Table 3 reveals that, in 1989, Australia (60%), the U.K. (38%), Sweden (33%), and the U.S. (32%) had the highest percentage of companies reporting environmental information in SQD. Except for Japan, Finland, and the U.K., 20% or more of the sample firms for each country used EQD as a disclosure form. The U.S. led the way in terms of FN, journal entry (JE), and aggregate violation disclosures (V1, V2, V3). Finally, on an individual firm basis, the U.S. (1.41) had the highest average of disclosures followed by Australia (.80), Sweden (.67), and the U.K. (.67).

Table 4 contains 1990 disclosures. The Netherlands (67%) followed by Australia (60%), were the major users of SQD. Canada (42%) was the largest user of EQD followed by Finland (25%), and France (20%). The U.K. (22%) was the number one user of FN, and the U.S. continued to lead the way in terms of using JE (11%) and the reporting of environmental violations (25%). On an individual firm basis, Canada (1.17), the U.K. (.89), Australia (.80), and the U.S. (.80) had the highest disclosure averages.

Table 5 reports that, for 1991, the Netherlands (50%) continued to lead the way in using SQD as a disclosure form, followed by the U.K. (44%), and Australia (40%). However, Canada (58%), Australia (40%), and Germany (32%) contributed the highest percentage of companies using EQD as a disclosure form. The U.S. (32%), and the U.K. companies (22%) were the largest users of FN, and companies from Canada (25%), the Netherlands (17%), the U.S. (11%), and the U.K. (11%) provided the highest percentage of users for JE. Again, Canada (1.42) had the highest disclosures per firm followed by the U.S. (1.34), and the U.K. (1.00). Finally, the U.S. continued to provide the highest percentage of companies using violation disclosures (8%). Table 6 provides the aggregate disclosure

Table 1. Forms of Environmental Disclosure by Year[1]

	SQD[2]	*EQD*	*FN*	*JE*	*V1*	*V2*	*V3*	*No. of Companies*	*Average Disclosure Per Firm*[4]
1989	26%(79)[3]	17%(52)	15%(47)	9%(28)	1%(3)	11%(33)	1%(4)	305(246)	.81
1990	23%(70)	15%(45)	10%(31)	6%(18)	2%(7)	8%(24)	1%(2)	305(197)	.65
1991	32%(98)	21%(64)	18%(55)	9%(26)	1%(3)	12%(36)	2%(5)	305(287)	.94
Aggregate	27%(247)	18%(161)	15%(133)	8%(72)	1%(13)	10%(93)	1%(11)	915(730)	.80

Notes: 1. See Figure 1 for descriptions of the environmental disclosure codes.
2. A company can use multiple forms of disclosure in any given year. For example, in 1989 Johnson Products used EQD and FN to disclose environmental information. Thus, each disclosure form is not mutually exclusive with respect to a given company.
3. The numbers in parentheses are the number of disclosures.
4. The average disclosure per firm is calculated by dividing the total number of disclosures by the number of companies (example for 1989: 246/305).

Table 2. Test for Significant Differences[1]

	SQD	*EQD*	*FN*	*JE*	*V1*	*V2*	*V3*	*No. of Companies Reporting*
1989 and 1990	0.8472[2] (0.4756)	0.7741 (0.3071)	1.9427 (0.0020*)	1.5338 (0.0004*)	–1.2750 (0.0000*)	1.2516 (0.0129*)	0.8196 (0.0000*)	1.8880 (0.0484*)
1989 and 1991	–1.6963 (0.2661)	–1.2376 (0.1662)	–0.8671 (0.2738)	0.2846 (0.5600)	0.0000 (1.0000)	–0.3829 (0.5085)	–0.3829 (0.0558)	–1.4467 (0.2451)
1990 and 1991	–2.5471 (0.0681)	–2.0115 (0.0163*)	–2.8057 (0.0000*)	–1.2516 (0.0032*)	1.2750 (0.0000*)	–1.6324 (0.0017*)	–1.1398 (0.0000*)	–3.3377 (0.0017*)
Non-EEC and EEC	0.9209 (0.4620)	–2.3680 (0.0022*)	–0.4987 (0.2596)	–0.3796 (0.2865)	—[3]	0.0857 (0.5313)	—	0.6261 (0.9097)
Non-EEC and U.S.	–0.8925 (0.5433)	–2.2445 (0.0037*)	–6.7986 (0.0000*)	–3.2257 (0.0000*)	–0.7932 (0.0000*)	–10.2458 (0.0000*)	–2.7315 (0.0000*)	–7.2680 (0.0000*)
EEC and U.S.	–1.7349 (0.1968)	0.3676 (0.6872)	–5.9492 (0.0000*)	–2.6505 (0.0000*)	—	–10.2071 (0.0000*)	—	–6.4692 (0.0000*)
Acct 1 and Acct 2	3.2273 (0.0164*)	2.7304 (0.0009*)	6.9351 (0.0000*)	3.3244 (0.0000*)	3.0289 (0.0000*)	9.8847 (0.0000*)	2.6788 (0.0000*)	8.6924 (0.0000*)

Notes: 1. See Figure 1 for descriptions of the environmental disclosure codes.
2. The top number is the t-test statistic and the bottom number, which is in parentheses, is the p-value.
3. "—" indicates that some needed information was unavailable for this comparison.
*Indicates significance at $\alpha \leq 0.05$.

Table 3. Forms of Environmental Disclosure for Companies within Each Country for 1989[1]

	SQD	*EQD*	*FN*	*JE*	*V1*	*V2*	*V3*	*No. of Companies*	*Average Disclosure Per Firm*
Australia	60%(3)*	20%(1)	—	—	—	—	—	5(4)	.80
Belgium	25%(1)	25%(1)	—	—	—	—	—	4(2)	.50
Canada	25%(3)	25%(3)	8%(1)	—	—	—	—	12(7)	.59
Denmark	—	—	—	—	—	—	—	1	
Finland	25%(2)	13%(1)	13%(1)	—	—	—	—	8(4)	.50
France	7%(1)	20%(3)	—	—	—	—	—	15(4)	.27
Germany	14%(4)	25%(7)	11%(3)	11%(3)	—	—	—	28(17)	.61
India	—	—	—	—	—	—	—	2	
Italy	20%(1)	—	—	—	—	—	—	5(1)	.20
Japan	13%(8)	—	3%(2)	2%(1)	—	2%(1)	—	60(12)	.20
Luxemburg	—	—	—	—	—	—	—	1	
New Zealand	100%(1)	—	—	—	—	—	—	1(1)	1
Netherlands	17%(1)	33%(2)	—	—	—	—	—	6(3)	.50
Norway	100%(2)	—	100%(2)	50%(1)	—	—	—	2(5)	.25
Republic of China	—	—	—	—	—	—	—	1	
South Africa	—	—	—	—	—	—	—	1	
Spain	—	—	—	—	—	—	—	2	
Sweden	33%(5)	27%(4)	—	7%(1)	—	—	—	15(10)	.67
Switzerland	75%(3)	—	—	—	—	—	—	4(3)	.75
United Kingdom	38%(7)	11%(2)	11%(2)	6%(1)	—	—	—	18(12)	.67
United States	32%(37)	25%(28)	32%(36)	18%(21)	3%(3)	28%(32)	4%(4)	114(161)	1.41

Note: 1. See Figure 1 for descriptions of the environmental disclosure codes.
*The number in parentheses represents the number of firms reported.

Table 4. Forms of Environmental Disclosure for Companies within Each Country for 1990[1]

	SQD	*EQD*	*FN*	*JE*	*V1*	*V2*	*V3*	*No. of Companies*	*Average Disclosure Per Firm*
Australia	60%(3)	20%(1)	—	—	—	—	—	5(4)	.80
Belgium	—	50%(2)	—	—	—	—	—	4(2)	.50
Canada	33%(4)	42%(5)	17%(2)	8%(1)	17%(2)	—	—	12(14)	1.17
Denmark	100%(1)	—	—	—	—	—	—	1(1)	1
Finland	25%(2)	25%(2)	—	—	—	—	—	8(4)	.50
France	7%(1)	20%(3)	—	—	—	—	—	15(4)	.27
Germany	14%(4)	21%(6)	7%(2)	7%(2)	—	—	—	28(14)	.50
India	—	—	—	—	—	—	—	2	
Italy	20%(1)	—	—	—	—	—	—	5(1)	.20
Japan	22%(13)	2%(1)	7%(4)	5%(3)	—	2%(1)	—	60(22)	.37
Luxemburg	—	—	—	—	—	—	—	1	
New Zealand	—	100%(1)	—	—	—	—	—	1(1)	1
Netherlands	67%(4)	33%(2)	—	—	—	—	—	6(6)	1
Norway	50%(1)	50%(1)	100%(2)	100%(2)	50%(1)	—	—	2(7)	3.5
Republic of China	—	—	—	—	—	—	—	1	
South Africa	—	—	—	—	—	—	—	1	
Spain	—	—	—	—	—	—	—	2	
Sweden	33%(5)	13%(2)	—	—	—	—	—	15(7)	.47
Switzerland	50%(2)	—	25%(1)	—	—	—	—	4(3)	.75
United Kingdom	33%(6)	17%(3)	22%(4)	11%(2)	—	6%(1)	—	18(16)	.89
United States	20%(23)	14%(16)	14%(16)	7%(8)	4%(4)	19%(22)	2%(2)	114(91)	.80

Note: 1. See Figure 1 for descriptions of the environmental disclosure codes.

Table 5. Forms of Environmental Disclosure for Companies within Each Country for 1991[1]

	SQD	*EQD*	*FN*	*JE*	*V1*	*V2*	*V3*	*No. of Companies*	*Average Disclosure Per Firm*
Australia	40%(2)	40%(2)	—	—	—	—	—	5(4)	.80
Belgium	25%(1)	50%(2)	—	—	—	—	—	4(3)	.75
Canada	25%(3)	58%(7)	17%(2)	25%(3)	17%(2)	—	—	12(17)	1.42
Denmark	—	100%(1)	—	—	—	—	—	1(1)	1
Finland	38%(3)	13%(1)	—	—	—	—	—	8(4)	.50
France	27%(4)	13%(2)	7%(1)	7%(1)	—	—	—	15(8)	.53
Germany	29%(8)	32%(9)	11%(3)	7%(2)	—	—	—	28(22)	.79
India	—	—	—	—	—	—	—	2	
Italy	—	20%(1)	—	—	—	—	—	5(1)	.20
Japan	27%(16)	10%(6)	7%(4)	5%(3)	—	2%(1)	—	60(30)	.50
Luxemburg	—	—	—	—	—	—	—	1	
New Zealand	100%(1)	—	—	—	—	—	—	1(1)	1
Netherlands	50%(3)	17%(1)	17%(1)	17%(1)	—	—	—	6(6)	1
Norway	—	100%(2)	100%(2)	100%(2)	—	—	50%(1)	2(7)	3.5
Republic of China	—	—	—	—	—	—	—	1	
South Africa	—	—	—	—	—	—	—	1	
Spain	—	—	—	—	—	—	—	2	
Sweden	33%(5)	13%(2)	—	—	—	—	—	15(7)	.47
Switzerland	50%(2)	50%(2)	25%(1)	—	—	—	—	4(5)	1.25
United Kingdom	44%(8)	17%(3)	22%(4)	11%(2)	—	6%(1)	—	18(18)	1
United States	37%(42)	20%(23)	32%(37)	11%(12)	1%(1)	3%(34)	4%(4)	114(153)	1.34

Note: 1. See Figure 1 for descriptions of the environmental disclosure codes.

Table 6. Aggregate Level of Environmental Disclosure Forms for All Years by Country[1]

	SQD	*EQD*	*FN*	*JE*	*V1*	*V2*	*V3*	*No. of Companies*	*No. of Obs.*	*Average Disclosure Per Firm*
Australia	53%(8)	27%(4)	—	—	—	—	—	5	15(12)	.80
Belgium	17%(2)	42%(5)	—	—	—	—	—	4	12(7)	.58
Canada	28%(10)	42%(15)	14%(5)	11%(4)	11%(4)	—	—	12	36(38)	1.06
Denmark	33%(1)	33%(1)	—	—	—	—	—	1	3(2)	.67
Finland	29%(7)	17%(4)	4%(1)	—	—	—	—	8	24(12)	.50
France	13%(6)	18%(8)	2%(1)	2%(1)	—	—	—	15	45(16)	.36
Germany	19%(16)	26%(22)	10%(8)	8%(7)	—	—	—	28	84(53)	.63
India	—	—	—	—	—	—	—	2		
Italy	13%(2)	7%(1)	—	—	—	—	—	5	15(3)	.20
Japan	21%(37)	4%(17)	6%(10)	4%(7)	—	2%(3)	—	60	180(64)	.36
Luxemburg	—	—	—	—	—	—	—	1		
New Zealand	67%(2)	33%(1)	—	—	—	—	—	1	3(3)	1
Netherlands	44%(8)	28%(5)	6%(1)	6%(1)	—	—	—	6	18(15)	.83
Norway	50%(3)	50%(3)	100%(6)	83%(5)	17%(1)	—	17%(1)	2	6(19)	3.17
Republic of China	—	—	—	—	—	—	—	1		
South Africa	—	—	—	—	—	—	—	1		
Spain	—	—	—	—	—	—	—	2		
Sweden	33%(15)	18%(8)	—	2%(1)	—	—	—	15	45(24)	.53
Switzerland	58%(7)	17%(2)	17%(2)	—	—	—	—	4	12(11)	.95
United Kingdom	35%(21)	16%(8)	19%(10)	9%(5)	—	3%(2)	—	18	54(40)	.85
United States	30%(10)	20%(67)	26%(89)	12%(41)	2%(8)	26%(88)	3%(10)	114	342(405)	1.18

Note: 1. See Figure 1 for descriptions of the environmental disclosure codes.

behavior for each country over the three year time period. The U.S. (1.18), Canada (1.06), and the U.K. (.85) had the highest average disclosures per firm.

In Table 7, Panels A through C present the descriptive statistics for the disclosure level of each country by year. An analysis of the panels reveals that, on a yearly basis, sample companies in most countries did not experience a material change in their disclosure level. The above observation is based upon a comparison of the annual change in the maximum disclosure level with the annual change in the median value. That is, a change in the annual maximum value, for firms in a given country and year, can only represent an overall change in the disclosure behavior of sample firms with that country if its median level of disclosure also changes in the same direction. For example, Canadian companies experienced an increase in their maximum disclosure level from two in 1989 (see Panel A) to four in 1990 (see Panel B), and an increase in their median disclosure value from 0.5000 to 1.0000. Thus, from 1989 to 1990, Canadian companies experienced an overall increase in their level of disclosure. On the other hand, Japanese companies experienced an increase in their maximum disclosure value from two in 1989 to three in 1990, and no change in their median value (0.0000). Hence, the increase in the maximum value cannot be considered as an overall increase in the disclosure level across Japanese companies.

An additional upward trend in the level of disclosure can also be observed from changes in the maximum and median disclosure levels for companies in the U.K. The maximum disclosure level increased from four in 1989 to five in 1990 and the median disclosure value from one to three.

Table 7. Descriptive Statistics of Environmental Disclosure Levels within Each Country

Panel A: 1989

Country	*max*	*Q3*	*med*	*Q1*	*min*	*N*	*SD*
Australia	1	1	1	1	0	5	0.4472
Belgium	1	1	.5	0	0	4	0.5774
Canada	2	1	.5	0	0	12	0.6686
Denmark	0	0	0	0	0	1	0.0000
Finland	2	1	0	0	0	8	0.7559
France	1	1	0	0	0	15	0.4577
Germany	3	1	0	0	0	28	0.8751
India	0	0	0	0	0	2	0.0000
Italy	1	0	0	0	0	5	0.4472
Japan	2	0	0	0	0	60	0.4801
Luxemburg	0	0	0	0	0	1	0.0000
New Zealand	1	1	1	1	1	1	0.0000
Netherlands	1	1	.5	0	0	6	0.5477
Norway	3	3	2.5	2	2	2	0.7071
Rep. China	0	0	0	0	0	1	0.0000
So. Africa	0	0	0	0	0	1	0.0000
Spain	0	0	0	0	0	2	0.0000
Sweden	2	1	1	0	0	15	0.6172
Switzerland	1	1	1	.5	0	4	0.5000
United Kingdom	4	2	1	1	1	18	0.8402
United States	5	2	1	0	0	114	1.3941

Table 7. Continued

Panel B: 1990

Country	*max*	*Q3*	*med*	*Q1*	*min*	*N*	*SD*
Australia	1	1	1	1	0	5	0.4472
Belgium	1	1	.5	0	0	4	0.5774
Canada	4	1	1	.5	0	12	1.1934
Denmark	1	1	1	1	1	1	0.0000
Finland	1	1	.5	0	0	8	0.5345
France	1	1	0	0	0	15	0.4577
Germany	3	1	0	0	0	28	0.7454
India	0	0	0	0	0	2	0.0000
Italy	1	0	0	0	0	5	0.4472
Japan	3	1	0	0	0	60	0.7123
Luxemburg	0	0	0	0	0	1	0.0000
New Zealand	1	1	1	1	1	1	0.0000
Netherlands	1	1	1	1	1	6	0.0000
Norway	4	4	3.5	3	3	2	0.7071
Rep. China	0	0	0	0	0	1	0.0000
So. Africa	0	0	0	0	0	1	0.0000
Spain	0	0	0	0	0	2	0.0000
Sweden	1	1	0	0	0	15	0.5164
Switzerland	2	1.5	.5	0	0	4	0.9574
United Kingdom	5	3	3	2	2	18	1.0226
United States	4	1	0	0	0	114	1.2206

Panel C: 1991

Country	*max*	*Q3*	*med*	*Q1*	*min*	*N*	*SD*
Australia	1	1	1	1	0	5	0.4472
Belgium	1	1	1	.5	0	4	0.5000
Canada	4	2	1	1	0	12	1.1645
Denmark	1	1	1	1	1	1	0.0000
Finland	1	1	.5	0	0	8	0.5345
France	3	1	0	0	0	15	0.8338
Germany	3	1	1	0	0	28	0.8325
India	0	0	0	0	0	2	0.0000
Italy	1	0	0	0	0	5	0.4472
Japan	3	1	0	0	0	60	0.6765
Luxemburg	0	0	0	0	0	1	0.0000
New Zealand	1	1	1	1	1	1	0.0000
Netherlands	3	1	1	0	0	6	1.0955
Norway	4	4	3.5	3	3	2	0.7071
Rep. China	0	0	0	0	0	1	0.0000
So. Africa	0	0	0	0	0	1	0.0000
Spain	0	0	0	0	0	2	0.0000
Sweden	1	1	0	0	0	15	0.5164
Switzerland	2	1.5	1	1	1	4	0.5000
United Kingdom	6	3	3	2	2	18	1.3485
United States	5	2	1	0	0	114	1.5041

Finally, companies in both Finland and Sweden exhibited, from 1989 to 1990, a downward change in the maximum and median disclosure values. However, for U.S. companies the maximum and median disclosure values were lower in 1989 (maximum = 4, median = 0) than in both 1988 and 1990 (maximum = 5, median = 1).

Table 8 contains aggregate descriptive statistics for each country over the entire sample period. In general, Australian companies have an evenly distributed level of environmental disclosures (the maximum, Q3, and median values are all equal to one). However, the disclosure level for companies in Finland and Sweden are skewed left, i.e., most of the companies in these countries have a median disclosure level lower than the average which implies that each sample firm should have more than one disclosure form in its AR.[4] Companies in Germany, France, Japan and the Netherlands also have exhibited a skewed left distribution with a higher maximum disclosure level (a maximum of three as opposed to two).

Canadian and U.K. companies have a median disclosure level of one and a maximum disclosure level of four. This indicates, in these two countries, greater dispersion in the level of disclosure across companies than that exhibited by the above companies and countries. Additional evidence supporting high dispersion appears in the standard deviation reported for both Canada (1.0676) and the U.K. (1.0004). Further, since the mean for Canadian companies' (1.06) level of disclosure is greater than its median (1.00), it can be inferred that the majority of the Canadian companies should have a disclosure level higher than one. On the other hand, since the mean (.85) for U.K. companies is lower than its median (1.00), it can be inferred that the majority of the U.K. companies should have a disclosure level lower than one.

U.S. companies have the highest disclosure level (5) and dispersion (standard deviation = 1.4011) across the 21 countries. Their median disclosure value (1.00) is less than its mean (1.18) which implies that each sample firm should have more than one disclosure form in its AR.

Table 9 contains the disclosure forms for EEC, non-EEC, and U.S. companies by year. In 1989, U.S. companies were the number one users of all disclosure forms. Non-EEC

Table 8. Descriptive Statistics for Disclosure Levels within Each Country for All Years

Country	*max*	*Q3*	*med*	*Q1*	*min*	*N*	*SD*
Australia	1	1	1	1	0	15	0.4140
Belgium	1	1	1	0	0	12	0.5149
Canada	4	1	1	0	0	36	1.0676
Denmark	1	1	1	0	0	3	0.5774
Finland	2	1	0	0	0	24	0.5898
France	3	1	0	0	0	45	0.6089
Germany	3	1	0	0	0	84	0.8182
India	0	0	0	0	0	6	0.0000
Italy	1	0	0	0	0	15	0.4140
Japan	3	1	0	0	0	180	0.6397
Luxemburg	0	0	0	0	0	3	0.0000
New Zealand	1	1	1	1	1	3	0.0000
Netherlands	3	1	1	0	0	18	0.7071
Norway	4	4	3	3	2	6	0.7528
Republic of China	0	0	0	0	0	3	0.0000
South Africa	0	0	0	0	0	3	0.0000
Spain	0	0	0	0	0	6	0.0000
Sweden	2	1	1	0	0	45	0.5477
Switzerland	2	1	1	.5	0	12	0.6686
United Kingdom	4	1	1	0	0	54	0.9983
United States	5	2	1	0	0	342	1.4011

Table 9. Forms of Disclosure for European Economic Community, Non-European Economic Community, and the United States[1]

	SQD	*EQD*	*FN*	*JE*	*V1*	*V2*	*V3*	*No. of Companies*	*Average No. of Disclosures*
1989									
Non-EEC	24%(27)	8%(9)	5%(6)	3%(3)	—	1%(1)	—	111(46)	.41
EEC	19%(15)	19%(15)	6%(5)	5%(4)	—	—	—	80(39)	.49
U.S.	32%(37)	25%(28)	32%(36)	18%(21)	3%(3)	28%(32)	4%(4)	114(161)	1.41
1990									
Non-EEC	27%(30)	12%(13)	8%(9)	5%(6)	3%(3)	1%(1)	—	111(62)	.56
EEC	21%(17)	20%(16)	8%(9)	5%(6)	—	1%(1)	—	80(44)	.55
U.S.	20%(23)	14%(16)	14%(16)	7%(8)	4%(4)	19%(22)	2%(2)	114(91)	.80
1991									
Non-EEC	29%(32)	20%(22)	8%(9)	7%(8)	2%(2)	1%(1)	1%(1)	111(75)	.68
EEC	30%(24)	24%(19)	11%(9)	8%(6)	—	1%(1)	—	80(59)	.74
U.S.	37%(42)	20%(23)	32%(37)	11%(12)	1%(1)	30%(34)	4%(4)	114(153)	1.34
Totals									
Non-EEC	27%(89)	13%(44)	7%(24)	5%(17)	2%(5)	1%(3)	— (1)	333(183)	.55
EEC	23%(56)	21%(50)	8%(20)	6%(14)	—	1%(2)	—	240(142)	.59
U.S.	30%(102)	20%(67)	26%(89)	12%(41)	2%(8)	26%(88)	3%(10)	347(405)	1.17

Note: 1. See Figure 1 for descriptions of the environmental disclosure codes.

companies were second with regard to SQD and the reporting of environmental violations, and EEC companies were second with respect to EQD, FN, and JE.

In 1990, except for SQD (which was dominated by non-EEC companies), U.S. companies continued to provide the highest percentage of companies using all disclosure forms. EEC companies were second in EQD disclosures and non-EEC companies were second in aggregate environmental violation disclosures. Non-EEC and EEC companies tied for second in the remaining disclosure forms.

In 1991, U.S. companies continued to dominate all disclosure forms followed by EEC companies in every category, except for aggregate environmental violations which was dominated by non-EEC companies. On an aggregate level, the U.S. had the highest average number of disclosures followed by EEC and non-EEC companies.

Table 2 contains the test for statistically significant differences in the aggregate disclosure behavior for each disclosure form for EEC, non-EEC, and U.S. companies. There is a significant difference between EEC and non-EEC companies in their use of EQD. SQD was the only disclosure form that did not produce a statistically significant difference between non-EEC and U.S. companies. Finally, in terms of EEC and U.S. companies, JE and environmental violation disclosures are the only two disclosure forms to produce a statistically significant difference.

Table 10 presents disclosure forms in terms of two accounting models. *Accounting model one* is a British-American model and *accounting model two* is a Continental model. The definition of these models was developed by Mueller et al. (1994). Because of the countries in which the sample companies are located, only two of the four accounting models discussed by Mueller et al., are used. Countries included in *accounting model one* are Australia, Canada, India, New Zealand, Netherlands, Republic of China, South Africa, the United Kingdom, and the United States. Countries included in *accounting model two* are Belgium, Denmark, Finland, France, Germany, Italy, Japan, Luxemburg, Norway, Spain, Sweden, and Switzerland.

In each of the years presented, *accounting model one* had the highest percentage of companies employing each of the disclosure forms. Additionally, the differences between the models are statistically significant.

SUMMARY AND CONCLUSIONS

A total of 276 companies from nine broadly defined industries (based on four digit Standard Industrial Classification [SIC] codes) and 27 countries were selected for inclusion in the study. Environmental information was taken from each company's AR over a three-year time period (1989-1991). The information extracted was coded and then classified into one of six disclosure forms. The disclosure forms were developed based upon environmental information reported in ARs, and mandatory environmental disclosure requirements.

An analysis of the disclosures has revealed that:

1. except for SQD and EQD, there is a statistically significant difference between the 1989 and 1990 individual and overall disclosures.

2. all of the differences are positive, except for V1 (firm has been cited for environmental violations and/or is conducting remediation efforts and associated costs are significant), which

Table 10. Forms of Environmental Disclosure for Each Accounting Model by Year[1]

	SQD	*EQD*	*FN*	*JE*	*V1*	*V2*	*V3*	*No. of Companies*	*Average No. of Disclosures*
1989									
Acct 1	33%(52)	23%(36)	24%(39)	14%(22)	2%(3)	20%(32)	3%(4)	160(188)	1.18
Acct 2	19%(27)	11%(16)	6%(8)	4%(6)	—	1%(1)	—	145(58)	.40
1990									
Acct 1	25%(40)	18%(28)	14%(22)	7%(11)	4%(6)	14%(23)	1%(2)	160(132)	.83
Acct 2	21%(30)	12%(17)	6%(9)	5%(7)	1%(1)	1%(1)	—	145(65)	.45
1991									
Acct 1	37%(59)	23%(36)	28%(44)	11%(18)	2%(3)	22%(35)	3%(4)	160(199)	1.24
Acct 2	27%(39)	19%(28)	8%(11)	6%(8)	—	1%(1)	1%(1)	145(88)	.61
Totals									
Acct 1	31%(151)	21%(100)	22%(105)	11%(51)	3%(12)	19%(90)	2%(10)	480(519)	18.92
Acct 2	22%(96)	14%(61)	6%(28)	5%(21)	— (1)	1%(3)	— (1)	435(211)	.49

Note: 1. See Figure 1 for descriptions of the environmental disclosure codes.

means the 1990 overall environmental disclosure level was lower than that of 1989 (the converse is true with regard to V1)

3. except for V1, there is a statistically significant negative difference between 1990 and 1991 individual and overall disclosures (which means that 1991 individual and overall disclosures were higher than that for 1990)

4. over the test period, the U.K. provided the highest percentage of companies using SQD, Canadian companies were the major users of EQD, and U.S. companies were the major users of the remaining disclosure forms

5. sampled companies in most countries did not experience a material individual change in their level of disclosure

6. there was a high amount of dispersion in the level of disclosures across Canadian and U.K. companies, and the U.S. companies had the highest dispersion across the 21 countries

7. the U.S., Canada, and the U.K. had the highest average disclosures per firm

8. the 45% increase, from 1990 to 1991, in the average disclosures per firm might be a surrogate for a willingness of firms to disclose more environmental information. (This willingness of international companies to disclose more information might also account for the 40% increase, from 1990 to 1991 in the number of firms using EQD as a disclosure form.)

9. except for the U.K., the majority of the companies in the other countries had more than one disclosure form (with the U.K. the majority of companies had less than one disclosure form)

10. in terms of comparing EEC, non-EEC and U.S. companies' use of the disclosure forms, the U.S. provided the highest percentage of companies reporting environmental information in every disclosure category followed by the EEC companies (except for SQD), and

11. the highest percentage of companies employing the different environmental disclosure forms utilized the British-American accounting model.

Based upon the following observations of the sample data, the results contained in this paper have policy implications. First, there appear to be extremely diverse practices among and within the sample countries. Furthermore, those practices are not consistently applied across time. Second, a number of companies reported the same environmental information in a number of different places. Third, companies operating in countries with a high social conscience and/or developed capital markets will voluntarily disclose more than required information (see, for example, Swedish, Canadian, U.S., and U.K. companies). Fourth, there appears to be an overall willingness of firms to issue environmental information.

In terms of establishing policy for environmental reporting, policy makers should require, at a minimum, a company's environmental policy and objectives, contingent and actual liabilities, current and estimated capital expenditures, asset valuation, risk assessment, performance measures, and the impact of environmental costs on earnings and earnings per share. This minimum requirement should provide stakeholders with information that will allow them to assess the cash flow effect as well as societal impact of an entity's environmental concerns.[5]

The above minimum requirement takes into account the heterogeneous informational needs of stakeholders and focuses on their common interest. It also accounts for the need to report information on a consistent basis, the willingness of firms to report more than the

required information, and the present set of information reported by those countries that have developed capital markets and/or high level of social conscious.

Finally, it should be noted that the above requirement is cost effective because, for the most part, it only requires accounting records to separately account for those stocks (assets and liabilities) and flows (expenses and losses) that have been designated by management to represent their environmental efforts.

This study had several limitations. First, given the presentation diversity among ARs, a certain level of subjectivity was necessary in coding the different types of disclosures. Second, this study does not address the issue of what caused the firms within each industry to change their disclosure patterns. Finally, many disclosures may be highly correlated over time. For example, a company may disclose the same pollution violation in several successive years, thus limiting one's ability to draw conclusions regarding changes in specific disclosures over time. Third, this study has two size limitations. The first size limitation centers around the fact that we limited our sample to the largest multinational firms. The second limitation centers around the small number of firms used to represent a number of countries such as Belgium, India, and Luxemberg. Thus, the conclusions drawn in this study cannot be said to represent disclosure attributes of small companies, and companies for all countries. Finally, many disclosures may be highly correlated over time. For example, a company may disclose the same pollution violation in several successive years, thus limiting one's ability to draw conclusions regarding changes in specific disclosures over time.

APPENDIX

(Examples of Extended Qualitative Discussions Regarding Environmental Concerns Reported in Annual Reports)

CANADA: ENVIRONMENTAL RESULTS REPORTED

1992 is the third year in which Noranda Forest and Noranda Minerals will report their yearly environmental records. And this year, these two publications are joined by reports from James MacLaren Industries and Falcon-bridge Limited, both Noranda Group companies.

Using the approach of objective disclosure, these reports discuss compliance performance, specific issues facing operations, and areas requiring improvement. The objectives for the Forest and Minerals reports have stayed the same, holding central the priority of employee and shareholder education on environmental issues. All four reports strive to use information to build accountability at every level.

The Forest and Minerals reports address major environmental concerns. Along with charting their year-by-year progress in water and air compliance and discharges, the reports cover employee health and safety, and research and development.

To make sure that employees receive relevant information, each Minerals property manager prepares a site-specific report to accompany the group-wide report.

Environmental reports represent policy in action, helping to move ecological preservation from ideas and guidelines to the point where Noranda employees at the sites and in the offices take over to plan and drive the process at their level.

Communicating, like improving the environment, is an interactive process, and many voices, from outside special-interest groups to on-site employees and management, shape the content and the presentation of the Noranda reports. Input from report readers has also been helpful.

Audits Evaluate Environmental Performance

Noranda's environmental audit program is considered to be one of the most comprehensive in the world today. In 1992 alone, 69 audits were conducted at Noranda locations throughout North America and Europe.

The audits, which cover everything from atmospheric emissions and water discharges to occupational health and industrial hygiene, are the cornerstone of Noranda's environmental management system. Audit teams are chosen from a pool of about 80 specially-trained employees with a variety of backgrounds including environmental engineers, industrial hygienists, doctors and fire chiefs. These auditors drive forward the evolution of standards and procedures.

To keep the audits objective, team members who have no day-to-day connection with the facility being audited are selected from other Noranda companies. This also promotes an exchange of knowledge and expertise among the many operating companies.

Evaluation standards are high: compliance with government regulations and Noranda policy is the minimum acceptable performance. Programs are tailored individually for each plant process and, once established, they are applied consistently and rigorously.

Audits are highly systematic, with checklists and itemized details to be observed. Noranda auditors, however, look beyond the checklists to make observations on any environmental issue.

Within 90 days of the audits, plants prepare action plans to address every issue raised by the team. Implementation progress on these action plans is monitored regularly and reported to Noranda's senior management and to the Environmental Committee of the Board of Directors.

Communication Initiative Heightens Employee Awareness

When it comes to environmental awareness, a key objective at Noranda is the education of its employees. For the environmental policies at each operation to be truly meaningful, all employees must not only understand the policy, they must also incorporate its principles into their everyday work responsibilities and decision-making processes.

The way to achieve this grew out of a 1990 employee survey. Employees said they wanted more information about the environment, and they wanted it in face-to-face meetings. Noranda Minerals responded. They developed an employee environmental awareness program with the purpose of encouraging face-to-face meetings with small groups of employees throughout the company. So far, more than 7,000 employees have taken part in these small group meetings. Employees are asking questions and giving Noranda Minerals valuable feedback on how it can improve when it comes to the environment.

Issues are being addressed proactively. For example, a senior mechanical foreman at the Bell mine in British Columbia was concerned that a compressor apparatus might cause an oil spill in Babine Lake. While no spills had ever occurred, this employee took it upon

himself to make sure it would never happen. The $7,000 investment in new equipment was a small price to pay to safeguard the health of the lake.

While it is still too soon to quantify the results of the communication initiative, some benefits have been:

- heightened awareness of all employees
- increased emphasis on management to keep the environment a priority and not a consideration of secondary to production.

Did You Know?

...the natural resource industries account for almost 40% of Canada's total exports? And did you know that, in 1992 alone, Noranda invested $251 million protecting the environment....

Environment

Spending on environmental research, site restoration and new equipment to meet environmental standards amounted to $105 million in 1992, (not including $146 million spent by MacMillan), and is projected to be about $75 million in 1993. At December 31, 1992, Noranda had provided $160 million in its accounts for future site restoration and closure costs including $86 million provided in 1992. The debate on appropriate regulatory parameters, particularly with respect to Forest Product operations, is ongoing. Monitoring the integrity of international trade law, so that new environmental regulation does not become a hidden form of trade protection, is a relatively new issue. In its proactive participation in these debates, Noranda intends to ensure that its actions are responsible and that it fulfils it commitment to environmental protection. However, there can be no assurance that future changes in regulations and in the standards Noranda establishes for itself will not have a substantial impact on future operating costs and outputs.

Outlook

In 1993, Noranda Minerals will provide an estimated $31 million against future reclamation and site closure costs. Capital expenditures on environmental improvements totalled $39 million, including emission reduction at the Horne smelter and a water treatment plant at Brunswick. A further $15 million will be spent in 1993.

Environment and Recycling

Major environmental issues include air and water emissions, withdrawal of the working forest for purposes of conservation, recycling, solid waste disposal and controversy regarding certain harvesting practices. Noranda Forest is currently examining capital projects with an estimated cost over three years of $80 million, which would bring all of its operations into compliance with current environmental regulations. In accordance with government regulations, applications have been submitted for all mills requiring further expenditure for compliance, requesting that the deadline be extended by two years to December 31, 1995.

All operations affected by market demands for recycled fibre have now taken steps to introduce or expand recycled fibre content in their products. Over 85% of the production at Noranda Forest Recycled Papers now qualifies for the Environmental Choice "EcoLogo." Noranda Forest continues to expand its recycled content in directory and groundwood coated papers at Fraser and in newsprint at Masson in order to differentiate its products in the marketplace.

The Thurso and Prince George pulp mills have developed the capability to supply elemental chlorine free pulp to meet European market requirements as well as environmental regulations.

The Government of British Columbia is currently examining the ramifications of legislation enacted in July 1992 that sets a zero limit for release of absorbable organic halides (AOX) into waterways by the end of 2002. This examination includes the economic impact, and the validity of AOX as a regulatory parameter which correlates with environmental effects. Should this law remain in place without amendments, operations at Prince George would be adversely affected. In February 1993, the Ontario government proposed similar new regulations which would affect the Thorold mill should they become law. As technology is not currently available to meet these requirements, the economic consequences of these laws cannot be determined.

Current provincial government initiatives in British Columbia could result in a reduction in the availability of timber. In the interior of B. C., a reduction in total harvest is anticipated over the next five years. Northwood has increased its wood self-sufficiency over the past two years and believes that it can compete successfully for fibre, should the harvest reduction occur. (Noranda, Inc., 1992, Annual Report).

GERMANY: ENVIRONMENTAL PROTECTION

At Bayer, environmental protection and safety are part of the fabric of corporate policy. We know a company can be successful in the market only if equal priority is given to high product quality, maximum efficiency, environmental protection, and safety. Our research and development effort is also directed toward this end.

At our 1987 symposium, "Bayer's Perspective on the Environment," we announced we would invest DM 3 billion in environmental protection and safety over the following eight years. This investment program is on schedule: DM 1 billion has already been spent, and we have embarked on new construction projects costing an additional DM 500 million.

Continuing Efforts to Protect Surface Water

Although production continued to increase in 1990, we again reduced the discharge of organics in the waste water from Bayer's German plants. Since 1970, the organic load has decreased by 70 percent, while production has doubled.

We have also reduced discharges of heavy metals. Only a trace of mercury—less than 200 grams daily—is discharged in our effluents. The figures for other heavy metals are also low, with discharges down by well over 90 percent from their 1970 levels.

Protecting surface water will remain one of our primary tasks, with a special focus on reducing nitrogen and phosphate emissions. The measures we are adopting firmly support

international efforts in this field, especially those to protect the Rhine and Elbe rivers and the North Sea.

Another means of easing the burden on the environment is by taking in less water for cooling. Therefore, we are targeting for the mid-nineties a further cut of one-third in our current annual requirement of 522 million cubic meters.

An example of this strategy is the central cooling towers project at our Uerdingen plant, which involves recooling the water and recirculating it. We now use the same water in up to three cooling cycles before returning it to the river. In addition, we have greatly reduced our cooling water requirement through process improvements.

Further Advances in Water Air Purification

We have made significant advances in waster air purification through a number of measures. These include converting our power plants to more fuel-efficient processes and installing modern flue-gas cleaning units.

One such unit, which came into operation at our Uerdingen site in April 1990, reduces sulfur dioxide emissions from the power plant by more than 85 percent and nitrogen oxide emissions by more than 80 percent. The gypsum thus formed is used to produce sand-lime brick.

Waste Reduction Strategies

Our primary aim is to avoid generating waste in the first place. Where the formation of waste products is inevitable, we try to recycle or sell them. Organic residues are incinerated, saving primary energy.

A new, space-saving technology, developed by our environmental protection research unit and now operating on a trial basis, reduces by one-third the volume of solid waste to be put into landfills. This patented technology involves compressing inorganic, non-combustible waste materials into slabs, which are stacked to form cubes weighing several tons each. The cubes are wrapped in film to make them dustproof and waterproof, then put into a landfill like building blocks. We have been operating such a pilot facility in Leverkusen since September 1990. This new technology has the potential to become an important link in Bayer's waste-management chain and marks a significant step toward the landfill technology of tomorrow.

Success of Integrated Environmental Protection

With integrated environmental protection, preventive action takes precedence over disposal. The aim is to develop processes and production technologies that either are waste-free from the outset or at least have a reduced impact on the environment. Such processes can also be significantly more economical.

An example is the synthesis of parachlorotoluene, an important intermediate for crop protection agents, pharmaceuticals, and pigments. In this case we greatly reduced the quantity of non-reusable by-products.

To synthesize our beet herbicide, Goltix, we have introduced a new process that is not only safer, but also more environmentally compatible and more cost-efficient: the volume of waste is almost one-third lower and the yield considerably higher.

Product-oriented Environmental Protection

An even more fundamental approach is product-oriented environmental protection, an initiative we are taking to analyze and assess the environmental impact of our products from an entirely new perspective. At the earliest possible stage in a product's development, we analyze its potential impact on the environment over its entire lifetime, from synthesis to when it finally reenters the natural cycle. Here, too, we are drawing on our expertise in R&D, applications development and marketing.

Implementing this approach presents an enormous challenge to the company: success can come only through cooperation among a number of disciplines.

Recycling of plastics

In 1990 we established a Plastics Waste Management and Environment unit. Among the processes we have developed in collaboration with our customers is one for recycling in-plant scrap from the production of shoe soles. We have also developed a polyurethane recycling process by which production waste, reject moldings, and damaged car body parts can be compression-molded to make new parts.

At the beginning of May 1990, BASF, Bayer, and Hoechst set up the EWvk Entwicklungsgesellschaft für die Wiederverwertung von Kunststoffen mbH or Plastics Recycling Development Company, to work mainly on projects to reclaim and reuse plastics materials. At the same time, work is proceeding on environmentally sound methods to dispose of plastic waste.

Environmental Awareness among our Employees

If we are to implement our environmental strategies, our employees must be well informed in order to give them the necessary motivation. For example, we explain to our work force what is already being done, what has yet to be done, and where there is room for improvement. In 1990, a total of 8,000 employees attended some 500 seminars on environmental protection and occupational safety.

Other Provisions

Miscellaneous provisions include amounts for profit-related bonuses, vacations, employee service awards, environmental protection measures, discounts, agents' expenses and other uncertain liabilities. (Bayer Group, 1990, Annual Report).

NORWAY: INVESTMENTS IN NEW ENVIRONMENTALLY FRIENDLY TECHNOLOGY

In all its industrial activities Hydro will demonstrate a sense of responsibility for nature and the environment. As an international company Hydro aims to be in the forefront in environmental performance, both nationally and internationally.

In 1991 Hydro worked towards this goal on several levels. The company was one of the first to give its support to the "Business Charter for Sustainable Development" drawn up

by the International Chamber of Commerce (ICC) and the "Responsible Care" programme of the European Council of Chemical Manufacturers Federation (CEFIC).

For many years Norsk Hydro has been making extensive investments in new pollution abatement technology, and further major investments will be made in this field in the years ahead. Hydro will also exploit the potential for reducing emissions in existing plants. This will be achieved by optimising processes through improved operating procedures, at the same time as process economics will be improved. In this connection Hydro will place weight on developing the competence and environmental awareness of employees.

When choosing new technology and carrying out modifications and modernisation Hydro will place greater emphasis on environmental factors. Environmental impact assessments are prepared in connection with all major investments as an important part of the decision-making basis. In connection with the company's plans for expansion in Norway, in petrochemicals at Rafnes and in aluminum at Ardal and Sunndal, the environmental impact assessments show that in absolute terms pollutant emissions will be reduced, despite considerable increases in production.

Quality Assurance

Hydro is working systematically to improve its quality control systems for environmental performance, and is establishing targets and plans of action as well as monitoring and reporting procedures. This work was intensified in 1991 and will be systematically expanded in the years ahead to ensure that internal environmental control systems function satisfactorily.

Comprehensive Environmental Evaluations

In 1991 the company carried out life cycle analyses for several of its main products. Such analyses can be a useful tools in a more comprehensive environmental evaluation of industrial products.

Norsk Hydro has in 1991 published extensive information on the environmental effects of the use of mineral fertilizer, based on earlier investigations. These show among other things that optimum use of mineral fertilizer does not lead to increased leaching per crop unit from agriculture.

Similarly, Hydro has made extensive studies of the environmental aspects of the production, use, waste handling and recycling of PVC and aluminum. These studies show that from an environmental point of view PVC and aluminum compare favourably with alternative materials. Among other things the use of aluminum will reduce the weight of vehicles and energy consumption in the transport sector.

Reduced Emissions

In 1991 Norsk Hydro continued its systematic work to reduce the most significant emissions. Considerable improvements were again made in important areas.

At the magnesium plant at Porsgrunn, Norway, a unit to remove dioxins from emissions in the air was put into operation early in 1991. In spite of this it was not possible to reach the required level of emissions during the first year. The waste water treatment unit put

into operation the previous year is functioning as planned. The total dioxin emissions to air and water have been reduced by 96-98 percent since 1988.

Substantial improvements have also been achieved in emissions of nitrogen oxides (NOx) from nitric acid production. The company's new nitric acid plant at Porsgrunn has almost halved NOx emissions. The plant is the first in the world with equipment for eliminating laughing gas (N_2O). Almost 80 percent of the laughing gas is extracted.

Work to reduce emissions from the company's aluminum production continued in 1991, primarily through improvements in plant operation and process control. Total fluoride emissions from Hydro's four production sites in Norway were reduced by approximately 8 percent from 1990 to 1991, giving a total reduction of 47 percent between 1985 and 1991 despite an increase in production of 24 percent during the same period.

The total emissions of PAH (polycyclic aromatic hydro-carbons) in the air from aluminum production, were reduced by 14 percent from 1990 to 1991. The newly installed treatment unit at Ardalstangen was fully operative last year, giving a reduction in PAH emissions of approximately 90 percent. This brings the total reduction to between 1985 and 1991 to 52 percent.

Emissions of sulphur dioxide (SO_2) were reduced by 4.5 percent compared with the previous year. Hydro's largest source of SO_2 emissions is the aluminum plant at Ardal which does not have access to sea water for gas scrubbing. A project has been approved to install a unit based on a caustic solution to remove SO_2 at the Ardal plant, and this is expected to reduce emissions to one third of the present level in 1993. This will mean that Hydro's total emissions of SO_2 will be reduced by over 60 percent from 1980 to 1993.

At Hydro Rafnes a new chlorine reclamation unit will be put into operation early in 1992. This will convert EDC tar, a waste product of VCM production, to hydrochloric acid.

Oil discharge to the sea from offshore drilling activities has been reduced by using alternative methods of drilling mud and by taking drilling waste ashore. A study is being made of the possibility of reinjecting drilling waste.

In refining and marketing, equipment to recover hydrocarbon vapours is being installed at all Hydro's major depots. The last two depots will be equipped with such units during 1992.

Cleaning Up Old Landfills

At present in Norway, it is not clear where the economic responsibility lies for disposing of old landfills containing toxic material. Hydro has started an extensive environmental survey to ensure that waste is deposited or disposed of as safely as possible.

Favourable Energy Base

Norsk Hydro will in future give more attention to emissions of possible greenhouse gases. The company has an advantage in this respect since most of its energy supply is based on hydroelectric power. Moreover, Hydro also regards its access to natural gas as an advantage in this context, since gas is less CO_2-intensive than the alternatives, oil and coal.

Work on Greenhouse Gases

The company has embarked on a systematic programme to chart Hydro's emissions of various gases which could contribute to a possible greenhouse effect. For offshore activities a plan to reduce such emissions has been drawn up covering both existing and planned installations. Halon will no longer be used for fire extinguishing on new installations. For the fertilizer plants a study is being made of possible methods of reducing emissions of laughing gas, as is already being done in the new nitric acid plant at Porsgrunn. Hydro has also begun a programme to measure emissions of perfluorinated compounds (CF_4, C_2F_6) from the aluminum reduction process. Efforts to reduce the use of SF_6 as a blanketing agent during magnesium casting will be intensified.

Environmental Expenditure

Environmental expenditures which increase the life, capacity or result in improved safety or efficiency of a facility are capitalised. Expenditures that relate to an existing condition caused by past operations are expensed. Liabilities are recorded when environmental assessments or clean ups are probable and the cost can be reasonably estimated.

Contingencies

Hydro is subject to changing environmental laws and regulations that in the future may require the company to modernise technology to meet more stringent emissions standards or to take corrective actions for contaminated areas. The amount of such future costs is not determinable due to the unknown timing and extent of corrective actions which may be required.

The Norwegian tax authorities have won a case contesting the tax returns of Norsk Hydro a.s. and its principal Norwegian operating subsidiary for the period beginning on 1 July, 1975 through 31 December, 1981. The amount has been fully provided for as of 31 December, 1991. Hydro has filed an appeal on the case.

A complaint filed by one of the American magnesium producers led to the U.S. Department of Commerce issuing on 6 December, 1991, a preliminary countervailing duty of 32.85 percent of magnesium prices on imports to the U.S.A. from Canada. On 12 February, 1992, a preliminary anti-dumping ruling resulted in an additional 32.74 percent duty on imports from Canada and 8.26 percent duty on imports from Norway. Hydro contests the preliminary rulings. A final determination of the duties will occur in June, 1992. Such duties significantly affect Hydro's ability to import magnesium to the U.S.A. from Canada. Hydro has provided its accounts for write-downs of assets and restructuring costs deemed necessary under the circumstances based upon management's best judgement.

Environmental costs

Under Norwegian GAAP, environmental related expenditures are expensed as incurred. Under U.S. GAAP, environmental related expenditures which increase the life or improve the safety of a facility are capitalised and amortised through depreciation expense. (Norsk Hydro A.S., 1991, Annual Report).

UNITED STATES

Mobil activities include Research Engineering & Environmental Affairs, which brings high-profit technologies to our businesses and works to protect the environment. We'll accelerate delivery of technologies to market, and continue research on cleaner fuels. We'll continue investing to improve, expand and acquire assets, and to bolster Mobil's first-rate environmental record as requirements continue to tighten.

Environmental excellence has been Mobil's commitment—and practice—for decades. Last year Mobil built on that record with the industry's first coast-to-coast used-oil collection program...a pledge to slash U.S. emissions of certain chemicals 50% by year-end 1995...and many other examples of environmental responsibility you'll find in every section of this report. Nobody's perfect, but Mobil's commitment has been tested by countless government audits and by our own continual reviews. We set the same high standards to make all our plants safe for employees and neighbors.

With most of the easy-to-find oil discovered, with lighter crude oils growing more scarce, with the need to make cleaner fuels to protect the environment, high-tech know-how is more critical than ever. Technology: a Mobil strength to meet the challenges ahead.

Environmental excellence: words we aim to live by—as we have for decades. Last year spending topped a billion dollars, and some 750 professionals worked on the environment, health and safety.

It's a commitment for all Mobil people. They work to prevent oil spills, reduce emissions and develop cleaner, safer products and processes. Their results often set the standard for the industry.

Mobil's the only company to win the U.S. government's SAFE Award three times for our outstanding environmental and safety record in the Gulf of Mexico, where offshore rigs attract and shelter marine life. Similarly, Mobil Chemical leads in the U.S. Occupational Safety and Health Administration's tough Star program.

Leadership in recycling grows: from our joint-venture start-up of the nation's first polystyrene recycling plant to a recycling program for plastic grocery sacks at 4,000 U.S. supermarkets. We set up a nationwide used-oil acceptance program. Employees also do their part in office recycling programs.

Environmental excellence: a strength to build on for our people . . . our neighbors . . . and the future.

The Future: Mobil's Advantages

Our worldwide presence provides the experience that makes us a valued partner in any area. We have the financial strength to participate in megaprojects that can build our company over the long term. And we're recognized for environmental excellence, technological leadership and top-notch people.

The Environment: the Top Priority

Mobil is committed to the well-being of our employees, neighbors, customers and the environment. Here's a glimpse at just a few of the things we're doing:

In the U.S., use of natural gas for steam generators and advanced emission-control technology in our California heavy oil fields has allowed us to nearly double oil production in five years without any increase in air emissions. Last year in Alabama, we recycled dredged sand to restore and nourish a beach area scoured by a severe storm. University researchers are using two of our Gulf of Mexico platforms to study thriving fish and reef colonies near offshore oil and gas facilities. In Mobile Bay, we've drilled and produced deep corrosive gas in an environmentally safe manner for four years. That experience and our record could be welcomed by nations anxious to develop other deep fields.

In Africa, governments and international environmental groups praised the special precautions we took with seismic tests to minimize the impact on the fragile environment of the Zambezi valley.

Bringing Oil and Markets Closer Together

Our supply and trading group acquires crude oil and product to meet the needs of our refiners and marketers. They operate in volatile markets, and tougher environmental demands worldwide require that they meet stringent product specifications. Our global teamwork and flexibility are indispensable. Teams use an advanced communications network to ensure rapid, coordinated purchases and sales of crude and products. Their goal: to keep Mobil's system-wide needs balanced efficiently and economically.

Mobil's worldwide marine fleet ranks among the best in the industry. To keep our fleet modern and safe, we've spent over $200 million over the past several years on vessel upgrading programs, and last year contracted for a 280,000-ton double-hull tanker to be delivered in 1993 that surpasses required safety and environmental standards.

Meeting the Environmental Changes

Environmental demands toughened again in 1991. We made major strides to stay ahead and maintain our commitment to protect the environment.

In the U.S., the Clean Air Act requires oxygenated fuels, beginning in the fall of 1992, in all areas with carbon monoxide problems. The Act also requires reformulated gasoline to cut tailpipe emissions 15% by 1995 in the nine metropolitan areas with the worst ozone levels. That's critical for Mobil since those areas include some of our key markets. By 1996 California will require more severely reformulated gasoline than mandated by the Clean Air Act. To help achieve ambient air-quality standards and to meet the government's requirements for oxygenates like MTBE, we're considering building oxygenate units at some of our U.S. refineries, as well as building world-scale facilities in the U.S. and Saudi Arabia.

We're continuing our leading role in the U.S. auto/oil research program that's studying the total system—vehicle and fuel—to develop data on how to improve air quality at the lowest cost to the consumer. Our own aggressive research program is also under way to develop lower-emission gasolines. With our track record, we are confident that Mobil's worldwide refining system will supply competitive products to meet all environmental standards.

Major environmental initiatives include:

- investing in improvements at most of our refineries to reduce the sulfur emissions from motor fuel.
- phasing out lead at our Torrance refinery by year-end 1991 completed the removal of lead from all Mobil U.S. autogas.
- installing isomerization units to reduce benzene and raise octane in gasoline at many of our overseas refineries. These improvements, along with our upgradings, reduce air and water emissions.
- expanding our used-oil acceptance program, launched in 1990, to our entire U.S. marketing network. We've started similar programs overseas.

What Comes Next: More Improvement

What comes next? We'll be working on more refinery upgrades, more geographic concentration of markets and continued scrutiny of assets. Mobil and the industry face huge costs in responding to the Clean Air Act and other environmental regulations. We've got the financial and technical resources and the talent, flexibility and drive of our people to solve these problems and take advantage of opportunities along the way.

Another Specialty: Big Niches in Small Markets

Environmental concerns are creating new niches for synthetics. Mobil researchers and marketers developed Mobil Arctic, a synthetic lubricant for compressors using refrigerants that don't damage the earth's ozone layer. In Mobil's North Sea E&P operations, we're evaluating use of synthetic hydrocarbons for drilling fluids to make them more environmentally acceptable.

Adding Value in Technology and Elsewhere

Mobil is one of the few oil companies to integrate its technical resources into a single organization—Research, Engineering & Environmental Affairs. Scientists and engineers work with the operating units to develop and deliver the right technology at the lowest cost. Focusing our efforts slashes the time and cost of commercializing new technologies and moving new products to market.

New catalytic technologies will give Mobil an edge in making clean fuels. We're developing processes to lower benzene and sulfur in gasoline, and reduce aromatics in gasoline and diesel fuel. Another proprietary technology makes oxygenates similar to MTBE, a key component of reformulated gasoline. In 1991 we completed a $4 million emissions-testing laboratory that doubles our vehicle research efforts. And we're participating in the Environmental Protection Agency's voluntary program to cut emissions of certain chemicals 50% by year-end 1995.

In solar energy, we're working to boost the efficiency and cut the cost of making solar panels for the high-potential electric utility market. We make some of the world's largest and most powerful panels to convert sunlight to electricity.

Outlook

While reviewing the financial results that follow, you may find it helpful to understand Mobil's outlook for the petroleum industry. Although we cannot be certain, some of the trends Mobil believes will be important to our future operations are given below. The energy business is highly competitive, and large capital investments are needed to support environmentally responsible growth. The size and lead time often required to complete investment programs require a long-term view. Events of relatively short duration can tend to obscure favorable long-term trends.

The U.S. refining industry will be required to make enormous expenditures to meet new environmental regulations, including production of reformulated gasoline.

Downstream-Marketing & Refining

Our primary downstream goals are to expand in areas where we already have a strong asset base, enter areas with high-growth potential, streamline operations and sell assets that do not fit out long-term goals, and keep pace with growing environmental demands. Our 1991 earning climbed on the strong worldwide operating performance of our refineries. Several refineries set records. We upgraded refineries and bought, sold and swapped assets.

Capital expenditures climbed 78% from 1989 to 1991 because of refinery upgrades and increased environmental expenditures. Downstream assets increased in 1991 because of capital investments, which are part of our strategy to improve our established asset base.

U.S. Marketing & Refining Earnings

Special items reduced earnings in both 1991 and 1990. Special items in 1991 earnings included the settlement of litigation in California, a provision for future environmental remediation costs for service stations and a restructuring provision. In 1990 an environmental provision was established, mainly for service stations. This environmental provision decreased earnings by $127 million in 1990 and by $46 million in 1991.

Chemical

Our primary goals in Mobil Chemical are to generate attractive rates of return in our various businesses while maintaining safe and environmentally sound operations.

Environmental Activities

Environmental excellence and safe operations have long been Mobil's commitment and practice. For nearly four decades, Mobil has pursued a goal of a cleaner and healthier environment. In addition to what Mobil and other companies are doing to reduce emissions, discharges and wastes, the U.S. and other countries are now imposing more stringent environmental requirements. Although we cannot predict accurately how these developments will affect future earnings and operations, we expect to incur substantial

compliance costs. Mobil does not believe these costs vary significantly from those of our competitors.

In 1991 Mobil spent $407 million worldwide on capital investments for environmental protection and compliance, $229 million of which was in the U.S. The majority of this went to modify and add facilities to comply with federal and state clean air and water regulations as well as on waste management activities.

In addition, we spent and charged against current income $640 million for environmental protection and compliance in 1991. Of this, $481 million was in the U.S. These costs include expenditures to remediate past contamination and Mobil's operating, maintenance and administrative costs for controlling and monitoring the effect of operations on the environment.

Mobil has provided in its accounts for future costs associated with existing environmental remediation programs, principally for service stations, Superfund sites and exploration and producing properties. Mobil's year-end 1991 accumulated provision for environmental costs totaled $362 million pre-tax, including a 1991 charge of $46 million after-tax future environmental remediation costs, primarily for service stations.

Beyond the provisions for environmental remediation, we have $678 million accrued for restoration and removal costs mainly related to offshore producing facilities.

Capital expenditures for environmental protection in 1992 are expected to be significantly higher than in 1991, largely due to product quality related expenditures mandated by legislation. The 1990 federal Clean Air Act Amendments require the petroleum industry to increase the oxygen content of gasoline beginning in October 1992 to reduce carbon monoxide emissions in certain metropolitan areas. By 1995 gasoline will have to be reformulated to reduce emissions 15% in the nine metropolitan areas with the worst ozone levels. Additional emission reductions are mandated by the year 2000.

Mobil, like many other companies, periodically receives notices from the Environmental protection Agency (EPA), or equivalent state agencies, that Mobil has been designated as a "potentially responsible party" (PRP) for remediation of hazardous waste sites. Mobil does not consider the number of sites at which it has been designated PRP as a relevant measure of liability. Some companies may be involved in very few sites, but have much larger liabilities at one or a small number of sites than companies involved in many more sites. In addition, Mobil is usually one of many companies cited as PRP at these sites, and we have, to date, been successful in sharing cleanup costs with other financially sound companies. Also, the majority of these sites are still under investigation by the EPA or the state agencies concerned. Prior to actual cleanup, the PRPs assess site condition, apportion responsibility and determine the appropriate corrective action. In some instances, Mobil may have no liability or obtain a settlement for liability. The actual cleanup occurs after the PRPs obtain EPA or equivalent state agency approval.

In 1991 Mobil spent $3 million on Superfund or equivalent state legislation related expenses. Since the Superfund inception in the early 1990s, Mobil has spent $13 million and has been successful thus far in resolving our involvement in 46 of the 179 sites where we were named a PRP. The future costs associated with our remediation of Superfund sites are not known, but the costs are not expected to materially affect our financial position.

Selling and General Expenses

An environmental remediation reserve in 1990 contributed to the expense increase from 1989 to 1990. (Mobil Corp., 1991, Annual Report).

NOTES

1. Initially, 310 companies were selected for inclusion in this study. The researchers sent a letter to each company selected requesting a copy of their annual report for the years 1989, 1990, and 1991. A second request was sent to non-respondents. Due to no response or missing data (some companies did not send a copy of their annual report for all three years), 34 companies were eliminated from the final sample leaving a total of 276 companies.
2. *Fortune Global 500 Companies* was used to select the non-U.S. companies because for comparison purposes we wanted a sample of companies that was comparable to the U.S. companies in terms of size and environmental impact. Thus, because of this criterion, our study has a sample size limitation in terms of the number of companies used to represent countries such as Luxemburg, Spain, and New Zealand. The relatively low response rate (25%) also contributed to the final number of firms representing the above-mentioned countries.
3. Because of the number of countries included in the study, our discussion will be limited to those countries which are represented by five or more companies.
4. Average or mean disclosure values are found in Table 6.
5. A stakeholder is defined as a party who is directly affected by the actions of a corporate entity. A stakeholder can either be internal or external. Internal stakeholders are investors, creditors, and employees. External stakeholders are consumers, concerned citizens, local, state, and federal governments.

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Environmental Performance and Reporting: Perceptions of Managers and Accounting Professionals in Hong Kong

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Key words: Environmental disclosure; environmental performance; environmental reporting; pollution abatement

Abstract: *This study evaluates Hong Kong managers' perceptions of environmental performance and environmental disclosures by their firms. It also examines professional accountants' perceptions of environmental disclosures. The results of the study indicate that the vast majority of manager respondents considered environmental protection to be important for Hong Kong, but a review of environmental disclosures contained in annual reports indicates that there was a gap between perceived importance of environmental performance and actual environmental disclosures. This gap suggests that environmental disclosures on a voluntary basis have not encouraged managers to disclose voluntary information. So far as professional accountants are concerned, they did not express any strong feelings for environmental disclosures.*

Environmental issues are receiving increasing attention in Hong Kong. In a recent study, Ho, Ng and Ng (1994, pp. 62-65) have concluded that "although Hong Kong is late in addressing environmental issues compared with Western counterparts, the public is increasingly concerned with environmental protection." Increases in pollution levels, degradation of natural environments, and drastic changes in climatic conditions (probably due to global warming) have made the general public more aware of environmental issues, especially the pollution problem.

As a result of this awareness, investors, regulators, and the general public are demanding better environmental performance and more environmental disclosures from firms. In addition, stricter pollution abatement regulations are being considered by regulatory agencies. Despite increased demand for environmental information, Hong Kong companies have not shown great enthusiasm in providing environmental information as is evident from the Ho et al. (1994) study which found that disclosure of environmental information is not common in financial statements of Hong Kong firms. The lack of enthusiasm is probably influenced by the fear that environmental disclosures will give rise to liabilities,

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and pollution control activities will result in heavy costs, possibly thwarting future economic progress. However, there are no hard data on Hong Kong managers' attitudes toward environmental performance or disclosures.

This study examines Hong Kong managers' perceptions on the importance of environmental pollution, and their role in enhancing the company's sensitivity to environmental pollution. In addition, the study investigates whether there is any relationship between managers' perceptions on the importance of environmental performance/disclosure and actual environmental reporting.

Another objective of the study is to examine accounting professionals' perceptions concerning the importance of environmental disclosures by the firms. The usefulness of environmental information is enhanced if it is reliable and relevant. An environmental audit can contribute to the reliability and creditability of this information. The success of environmental audits, however, will greatly depend upon cooperation from accounting professionals. If accounting professionals are opposed to environmental audits, it would be difficult for investors and other users to obtain reliable environmental information.

BACKGROUND FOR THE STUDY AND LITERATURE REVIEW

The issue of corporate social and environmental responsibility has been extensively discussed in the economic, management, and accounting literature. The expectation of socially and environmentally responsible behavior from corporations has been justified on the basis of the following two arguments. The first argument relates to the concept of a social contract. Ramanathan (1976) formalized the social contract argument on the basis of external diseconomies, and developed a comprehensive theoretical work on "Social Accounting." The social contract is based on the notion that corporations do not exist in a vacuum, but are part of a society which creates and supports them. Furthermore, firms owe their existence to laws which have been developed by the society. Thus, society's continued support for the existence of businesses may be contingent upon their performance, which is considered socially desirable. If businesses engage in socially undesirable behavior, society may be forced to take steps to penalize such businesses, which might include boycotts of their products and services, modifications of the existing laws, and the development of new laws to restrict their activities. The punitive actions become especially evident when businesses violate environmental laws and regulations. The second argument relates to the "quality of life." Dierks (1979) advocated that the "quality of life" argument has been an important force in molding society's expectations from businesses. Unrestrained economic development, which resulted in an increase of social costs in staggering proportions, evident from environmental pollution and social ills, triggered society's negative attitude toward industrialization. Society began to perceive business as a villain and believed it to be responsible for environmental pollution and social ills.

The above two arguments heightened society's awareness, and consequently forced businesses in several countries to become more responsible for a cleaner environment. The "green accounting" movement in Western Europe provided an additional impetus to companies to contribute to a cleaner and healthier environment which should improve the quality of life.

A number of studies have been undertaken in different countries to examine corporate environmental performance from different perspectives. Several researchers have examined the association between corporate environmental performance and economic performance, (Spicer, 1978; Chen and Metcalf, 1980; Jaggi and Freeman, 1992). The results of these studies are inconclusive. Their findings in general indicate that the association in the short run is expected to be negative, but that it is likely to be positive in the long run.

Some studies have examined the association between the firms' pollution performance and their pollution disclosures, (Ingram and Frazier, 1980). The major objective of these studies has been to examine whether environmental disclosures, which are expected to provide relevant information to investors, reflect the firm's pollution performance. The findings of these studies are also contradictory in nature. Some studies have found that pollution disclosures by the firms reflect their pollution performance, while others have detected no such relationship.

Another group of studies has evaluated the nature and extent of social and environmental disclosures by firms in different countries. Most of these studies have been conducted in the United States and Western European countries, (Jaggi, 1980; Guthrie and Parker, 1989, 1990; Freedman and Stagliano, 1992). Recently, Ho et al. (1994) examined pollution disclosures by Hong Kong firms and concluded that:

> ... it is very disappointing to find that very few companies indeed disclose such information to the public through their annual reports. Also the disclosures are crude and limited to non-financial narrative statements expressing the firm's support on environmental protection and reporting on progress of environmental project. (1994, p. 62)

Given the limited environmental disclosures by Hong Kong firms, it will be of interest to determine whether the lack of environmental disclosures is due to managers' hostility toward environmental disclosures, or whether Hong Kong firms have not yet fully realized the importance of environmental information and the users' need for such information. This study specifically examines the managers' perceptions concerning the importance of environmental information. It also examines auditors' perceptions on environmental disclosures.

HYPOTHESES

Management's Attitude toward Environmental Performance and Disclosures

Management's attitude toward the firm's environmental performance and reporting can be influenced by several factors. One important factor is the nature of pollution abatement activities. If pollution abatement activities involve modernization of plant and equipment, management is likely to be positively inclined toward the firm's environmental performance because the investment will give a competitive edge and create a better image for the firm. Thus, modernization of plant and equipment will prove to be good not only for environment protection purposes, but also for the firm's economic benefit in the long term.

Management's attitude may also be influenced by an inherent risk if pollution abatement activities are not undertaken. If polluting companies fail to respond to public

pressure for better environmental performance, they may ultimately be faced with much higher costs by way of fines and a public boycott of their products. For example, chemical polluting firms may encounter the possibility of substantial clean-up and penalty costs if their activities pollute the environment in an unacceptable manner. Therefore, if managements do not take environmentally friendly initiatives to control pollution, they will have to pay for it later. On the other hand, if pollution is properly controlled, the company will not only save future costs, it will also achieve a competitive advantage by disclosing information on its environmental performance—as well as create a positive image for itself.

Management's attitude toward environmental performance by the firm is also likely to be influenced by general feelings in the society toward environmental protection, as well as by the legislative regulations. If society expects firms to be socially responsible, it will influence the management to have a positive attitude toward the environment. Additionally, management cannot ignore environmental regulations, which are being increasingly imposed upon firms to maintain clean environments (for example, Hong Kong has developed a Water Pollution Control Ordinance, Noise Control Ordinance, Air Pollution Control Ordinance, Dumping at Sea Act, Ozone Layer Protection Ordinance, and Waste and Disposal Ordinance).

The above arguments suggest that in an environment where the public interest in environmental concerns is heightened and environmental regulations are being constantly developed, Hong Kong managers are expected to have a positive attitude toward environmental performance and reporting. Thus, the following hypothesis is developed for the study:

> **H1:** *Management's attitude toward environmental performance and reporting is positive.*

Professional Accountants' Attitude toward Environmental Reporting

The reliability and usefulness of environmental information will be greatly enhanced if this information is independently audited. The independent audit of environmental activities can be described as an "environmental audit." The responsibility for environmental audits will fall on professional accountants because they are trained to perform such service, and they also enjoy the confidence and credibility of financial statement users. Thus, accountants and auditors will have a greater role to play in environmental reporting.

If professional accountants exhibit a negative attitude toward environmental reporting, we will be faced with a dilemma to conduct environmental audits without their full support. Consequently, environmental reporting will receive a serious set-back. It has been argued, however, that, as required by professional ethics, professional accountants can be considered socially responsible individuals who would recognize their duty in making reliable environmental information available to users. Therefore, we expect that professional accountants will have a positive attitude toward the disclosure of environmental information. The hypothesis for this expectation is as follows:

> **H2:** *Professional accountants' attitude toward environmental reporting is positive.*

RESEARCH DESIGN AND METHODOLOGY

Samples Selection

A sample of 100 companies from 520 listed Hong Kong companies was selected to test the first hypothesis. The listed companies are categorized as follows: industrial firms, financial institutions, consolidated enterprises, properties and utilites companies, and others including retailers, restaurants, and hotels. Attempts have been made to select more companies from sectors which are either environmentally sensitive in their daily operations, or industrial and utility companies which are widely recognized to have the greatest environmental problems, or firms which have memberships with the Private Sector Committee on the Environment (a public organization to promote environmental conservation awareness and activities). The original sample consisted of 28 industrial, 20 consolidated, 12 financial, 8 utilities, 7 properties companies; the remaining 25 companies belonged to other business sectors.

In addition to 100 listed companies, the study also used a sample of professional accountants to test the second hypothesis. By using the random sampling method, 100 CPA firms were selected from a total of 692 in Hong Kong.

Nature of Data and Data Collection Procedures

The study is primarily based on a questionnaire survey of management of Hong Kong listed companies and professional accountants from CPA firms. Additionally, annual reports of sample companies have also been reviewed to evaluate environmental disclosures contained in their statements.

Two separate questionnaires were designed: one for companies and the other for CPA firms. The company questionnaires were mailed to the Chief Accountants of the 100 sample companies, and CPA firm questionnaires were mailed to partners of the 100 sample CPA firms. Two months later, follow-up letters were sent to non-respondents in an attempt to ensure an adequate response rate.

The questionnaires consisted of two parts. In part one, demographic data of respondents were obtained; the second part contained questions on the respondents' perceptions on environmental issues and environmental reporting.

The management questionnaire elicited responses on the management perceptions on the importance of environment pollution by Hong Kong firms, and the need for environmental reporting. The questionnaire also contained questions on the company's actual environment performance, including actual environmental costs incurred by the firm and liabilities resulting from violation of environmental regulations.

The professional accountants' questionnaire was focused on the accountants' perceptions of environmental disclosures and the need for environmental regulations and accounting standards.

RESULTS

Table 1 summarizes responses from both companies and CPA firms. Despite our follow up letters, only 28 companies responded to our questionnaire. The highest response rate

Table 1. Distribution of Respondents from Hong Kong Listed Companies and CPA Firms

	Population	*Sample*	*Respondents*
Panel A:			
Listed Companies (by sector)			
Industrial	153	28	5
Properties	119	7	1
Consolidated	68	20	8
Finance	47	12	2
Utilities	11	8	7
Others	122	25	5
Total	520	100	28
Panel B:			
CPA Firms	692	100	35

was from the consolidated enterprises and utilities. There were 35 responses from CPA firms.

Management's Attitude toward Environmental Performance

Percentage distributions and mean scores of management responses to different questions are presented in Tables 2 and 3 respectively.

Although Hong Kong has been relatively late in addressing environmental issues compared to Western countries, management's concern for environmental issues is clearly evident from their responses. The results in Table 2 indicate that a vast majority of management respondents (85%) perceive environmental protection to be important for Hong Kong; the mean score for this item is 4.26 on a scale of 5, where 5 represents a strong positive perception. Response to this question thus suggests that managements' attitude toward environment protection is highly positive.

In addition to recognizing the significance of environmental issues, the respondents also realize the importance of their contributions in creating environmental sensitivity in their firms. Over 60% of respondents said that managers should contribute to environmental sensitivity in their companies, and the mean score for this item is 3.78.

The majority of respondents agree that companies have the social responsibility to incur costs voluntarily to protect the environment by installing new equipment which reduces emission of air pollutants. More than 62% of respondents agree that the implementation of environmental protection measures will cause companies to incur extra costs (Item 6). Moreover, 44% of respondents recognize that their companies have actually incurred such costs in the past. An analysis of these responses indicated that 42% belonged to the industrial and utility sectors.

Most companies do not think that there are too many government-imposed environmental regulations which influence their daily operations. However, some companies believe that these regulations may easily lead to liabilities, and these regulations will cause companies to incur extra costs. These concerns especially have been expressed by respondents from the industrial and consolidated enterprise sectors (30% and 47% respectively). Only approximately 10% of respondents from these companies reported that they frequently

Table 2. Distribution of Responses from Management of Hong Kong Listed Companies

	Percentage of Responses[1]				
	5	*4*	*3*	*2*	*1*
Management's contribution to environmental issues					
1. Environmental protection is important in Hong Kong	44%	41%	11%	4%	0%
2. Management should contribute to company's environmental sensitivity	11%	52%	33%	0%	4%
3. Company has social responsibility to voluntarily incur costs to proetect environment	15%	52%	29%	4%	0%
Management's attitude towards environmental costs and liabilities					
4. Government has influenced company's daily operations by imposing too many environmental regulations	0%	11%	33%	48%	8%
5. Company may easily incur liabilities due to environmental regulations	7%	19%	35%	35%	4%
6. Environmental protection would cause company to incur extra costs	4%	59%	33%	4%	0%
7. Company has incurred liabilities due to environmental regulations[2]	4%	4%	16%	28%	48%
8. Company has incurred extra costs to protect environment	11%	33%	34%	11%	11%
Management's perception on environmental disclosure					
9. Environmental contribution improves company image	18%	52%	26%	4%	0%
10. Company will have a better image if it discloses environmental information	4%	44%	33%	15%	4%
11. Stakeholders have right to environmental information	4%	22%	29%	41%	4%
12. Management has responsibility for environmental disclosure	4%	26%	30%	33%	7%
13. Disclosure of environmental information by companies will become general practice in near future.	4%	26%	33%	33%	4%

Notes: 1. Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, Strongly Disagree = 1.
2. Very Often = 5, Often = 4, Sometimes = 3, Seldom = 2, Never = 1.

incurred environmental liabiliities, compared to 46% of respondents who reported that their companies never incurred any liability.

Management's Attitude toward Environmental Disclosures

A substantial number of respondents (48%) think that both environmental abatement activities and environmental disclosures would enable their companies to improve their public image. Management, however, does not perceive disclosure of environmental information to be their responsibility (30%, Item 12), and they also do not believe that environmental disclosures will become a general practice (Item 13).

With regard to stakeholders' rights to environmental information, more than 45% of the respondents think that stakeholders have no such rights. This response runs counter to the general wisdom that stakeholders, including shareholders, employees, consumers, and the community, have a right to information about corporate operations and policies. The pos-

Table 3. Mean Scores of Responses from Management of Hong Kong Listed Companies

	Mean	*SD*	*t-Stat*[1]
Management's contribution to environmental issues			
1. Environmental protection is important in Hong Kong	4.26	0.80	11.4285*
2. Management should contribute to company's environmental sensitivity	3.67	0.82	7.4144.*
3. Company has social responsibility to voluntarily incur costs to proetect environment	3.78	.74	8.9888*
Management's attitude towards environmental costs and liabilities			
4. Government has influenced company's daily operations by imposing too many environmental regulations	2.48	0.79	–0.1316
5. Company may easily incur liabilities due to environmental regulations	2.92	1.00	2.1830*
6. Environmental protection would cause company to incur extra costs	3.63	0.62	9.4719*
7. Company has incurred liabilities due to environmental regulations[2]	1.88	1.07	–3.0112
8. Company has incurred extra costs to protect environment	3.22	1.13	3.3103*
Management's perception on environmental disclosure			
9. Environmental contribution improves company image	3.85	0.76	9.2276*
10. Company will have a better image if it discloses environmental information	3.30	0.90	4.6189*
11. Stakeholders have right to environmental information	2.81	0.94	1.7137
12. Management has responsibility for environmental disclosure	2.85	1.01	1.8004
13. Disclosure of environmental information by companies will become general practice in near future.	2.93	0.94	2.3770*

Notes: 1. Actual mean scores compared with expected mean values.
2. Significant at 5% level.

sible explanation may be that managements are inclined to disclose environmental information only when they can benefit from it. The examination of annual reports indicates that most companies published only favorable information. Cost and liability were seldom mentioned in the reports.

Analysis of Managers' Responses by Sectors

We also calculated mean responses for different sectors to analyze management responses across different types of industries (Table 4).

The results indicate that there is no significant difference between the mean responses of managers from different sectors with the exception of Items 4 and 7. The utility companies have sponsored more environmental activities compared to firms from other sectors (Item 4). Managers from industrial and utility sectors believe that they have a relatively higher responsibility for environmental disclosure. The underlying reason for these differ-

Table 4. Difference in Mean Scores of Responses by Sector[1]

	Industrial	*Utility*	*Consolidated*	*Others*	*Member*[2]	*Nonmember*
1. Environmental protection is important in Hong Kong	4.60	4.29	4.13	4.14	4.33	4.24
2. Management should contribute to company's environment sensitivity	4.00	3.71	3.38	3.71	3.67	3.67
3. Environmental contribution improves company image	3.80	4.14	3.88	3.57	4.17	3.76
4. Company has incurred extra costs to protect environment	2.60	4.00	2.75	2.43	3.83	2.71
5. Company has social responsibility to voluntarily incur costs to protect environment	3.60	4.14	3.50	3.86	4.33	3.62
6. Environmental protection would cause company to incur extra costs	3.60	3.29	3.88	3.71	3.33	3.17
7. Management has responsibility for environmental disclosure	3.20	3.29	2.75	2.29	3.00	2.81
8. Company will have a better image if it discloses environmental information	3.40	3.29	3.13	3.43	3.33	3.29
9. Disclosure of environmental information by companies will become general practice in near future	2.80	3.14	2.75	3.00	3.00	2.90

Notes: 1. The response scale is: Strongly Agree = 5, Strongly Disagree = 1.
2. Member denotes companies which have joined the Private Sector Committee on the Environment.

ences may be that industrial and utility companies have greater environmental exposure in their daily operations due to the nature of their business.

Actual Environmental Disclosures by Firms

An examination of 1992-1994 financial statements of all sample companies indicated that 13 of 100 companies had been consistently disclosing environmental information over the three-year period. Of the 13 disclosing companies, 7 responded to our questionnaire. This analysis suggests that of 28 respondents, only 7 companies disclosed environmental information and other companies did not. An examination of government records, however, revealed that 3 firms among the 100 sample companies were involved in material environmental regulation violations during the study period, but they neither disclosed this information in their annual reports nor responded to our survey. Distribution of environmental information-disclosing companies by sectors is given in Table 5.

Table 5 also classifies typical environmental disclosure practices. A review of the analysis reveals that some firms provided information on their environmental policies, and some on their environmental performance. Only 3 of the 100 sample companies provided quantitative information and none of them ever reported contingent liabilities. Most companies did not disclose any financial information on their environmental activities. All disclosures, descriptive in nature, were contained in the directors' report, in the annual review, or in the chairman's statement. However, there is no uniformity in the reporting format. In fact, reporting of environmental information exhibits significant differences among firms from different sectors. Table 6 reports management's preferences for disclo-

Table 5. Environmental Disclosures in Annual Reports of Sample Companies

A. *Number of Disclosing and Non-Disclosing Firms in Sample*	
Firms which disclosed environmental information	13
Firms which did not disclose environmental information	87
Total	100
B. *Distribution of Disclosing Firms by Sector*	
Utility	4
Industrial	3
Consolidated	2
Others	4
Total	13
C. *Types of Disclosures*	
Description:	
1. Environmental issues pertinent to company and industry	13
2. Environmental policies adopted	8
3. Improvements made since adoption of policies	3
4. Emission targets and actual performance	4
5. Response to government legislation	3
6. Material environmental issues in which company is involved	1
7. Material costs charged to current operations	3

sure of environment-related costs in financial reports, including environmental legislation violations and liabilities. The majority (67%) of respondents agree that environmental legislation violation penalties should be disclosed in financial reports or in footnotes to those reports. An even greater majority (73%) of respondents agree that contingent environmental liabilities should be disclosed in financial reports, while 86% want to disclose them only in footnotes to financial reports. The results imply that managements are well aware of the significance of environmental penalty and liability costs, even though they currently do not disclose them in financial statements.

Table 6. Management's Preference for Environmental Disclosures

	Percentage of Responses[1]				
	5	*4*	*3*	*2*	*1*
A. *Cost of treating industrial waste for environmental protection*					
1. Disclosure in financial report	16%	26%	30%	22%	6%
2. Disclosure in footnotes to financial report only	10%	44%	10%	23%	13%
3. Disclosure as a separate item in financial statements	13%	25%	17%	32%	13%
B. *Significant environmental legislation violation penalties*					
1. Disclosure in financial report	19%	48%	16%	7%	10%
2. Disclosure in footnotes to financial report only	10%	57%	7%	16%	10%
3. Disclosure as a separate item in financial statements	13%	42%	20%	9%	16%
C. *Contingent liabilities which may arise from regulatory or legal requirements*					
1. Disclosure in financial report	28%	45%	10%	10%	7%
2. Disclosure to footnotes to financial report only	14%	72%	7%	0%	7%
3. Disclosure as a separate item in financial statements	11%	39%	11%	21%	18%

Note: 1. Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, Strongly Disagree = 1.

In summary, an analysis of actual disclosures indicated that companies were generally reluctant to disclose environmental information voluntarily. It is possible that these companies have not yet started responding to environmental concerns actively, or that there is a gap between managers' attitudes and disclosures by companies.

Overall Results on Managers' Attitudes

The above discussion shows that managers' perceptions have been positive on environmental performance as well as disclosure. In order to test our first hypothesis, we conducted a *t*-test on the means of responses. It was hypothesized that if firms did not exhibit a positive attitude, then the mean of their responses would be less than or equal to the expected mean of the scale for each item, which is 2.5. The actual means were compared with the expected mean and a t-test was conducted to test the statistical significance of the results. The t-values for each response are given in Table 3.

The *t*-test results indicate that except for a few questions, managers positive responses to environment-related questions are statistically significant. The analysis especially indicates that managers believe that environmental protection is important for Hong Kong, and it is their responsibility to contribute to the company's environmental sensitivity, even if extra costs are involved to make the company environmentally responsible. These results, therefore, provide strong support to the first hypothesis that Hong Kong managers have a positive attitude toward environmental performance.

The managers' responses to environmental reporting indicate that they believe that the company will have a better image if it discloses environmental information, which suggests that the managers also have a positive attitude toward disclosure of environmental information. But a review of actual environmental disclosure reveals that firms have not been making adequate environmental disclosures. Thus, there is an expectation gap between what the managers believe should be disclosed and what is actually being disclosed. This phenomenon could be due to the fact that Hong Kong managers had a late start in terms of environmental accounting and are currently in the process of catching up with their counterparts in Western countries.

Results on the Attitude of Professional Accountants

The percentage distribution of responses from professional accountants is reported in Table 7.

Over 84% of professional accountants perceive that environmental protection is important for Hong Kong firms. More than 59% responded that professional accountants have something to do with the environmental issues, which may include assistance to clients in the recognition of potential liabilities, estimation of costs for environment-related activities, evaluation of clean-up costs, and development of measurement techniques and reporting procedures for environmental accounting. However, only 40% felt that accountants should contribute to environmental sensitivity of the firms.

As to the stakeholders' right to environmental information, 68% of professional accountants responded positively, compared to 26% managers. Therefore, accountants strongly

Table 7. Distribution of Responses from Management of Hong Kong Listed Companies

	Percentage of Responses[1]				
	5	*4*	*3*	*2*	*1*
Relations between environmental issues and professional accountants					
1. Environmental protection is important in Hong Kong	32%	52%	67%	10%	0%
2. Role of accountants is not limited to preparation of financial data	11%	41%	23%	19%	6%
3. Accountants have responsibility for environmental issues	13%	46%	25%	16%	0%
4. Accountants should contribute to companies' environmental sensitivity	9%	31%	44%	16%	0%
Perception of environmental disclosures					
5. Stakeholders have right to environmental information	16%	52%	23%	6%	3%
6. Government should require environmental disclosure by companies	13%	31%	25%	22%	9%
7. Companies may benefit from environmental disclosure	10%	41%	34%	15%	0%
Opinion on necessity for environmental reporting guidelines					
8. Environmental disclosures by listed companies in Hong Kong is not adequate	22%	38%	37%	3%	0%
9. Professional accountants do not have sufficient guidamce om dealing with environmental issues	16%	62%	19%	3%	0%
10. Accounting professional bodies should require environmental disclosure by companies	13%	19%	34%	25%	9%

Note: 1. Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, Strongly Disagree = 1.

believe that stakeholders have a right to environmental information. Professional accountants also believe that disclosures will help the companies.

Only 44% of respondents believe that imposition of disclosure requirements would be desirable, 31% are opposed to such requirements, and 25% are neutral. These responses suggest that a substantial number of accountants believe that voluntary disclosure of environmental information would be preferable.

The respondents (60%) strongly believe that Hong Kong listed companies are not disclosing environmental information adequately. The lack of adequate disclosures is confirmed by the review of financial statements. Professional accountants are highly critical of non-availabilty of guidelines on environmental issues. 78% of respondents feel that not enough guidance is available to deal with environmental issues.

Overall Evaluation of Professional Accountants' Responses

To assess the statistical significance of professional accountants' responses, we compared their mean responses with the expected mean of 2.5 based on the scale of 5, whereby 1 represents the most positive attitude. T-tests were conducted to determine the statistical significance of the results, (see Table 8).

The results indicate that CPA firms also strongly believe that environmental protection is important for Hong Kong. Another significant result relates to the availability of sufficient guidance in dealing with environmental issues. The CPA responses to other questions are not statistically significant, though in most cases they are close to the expected mean.

Table 8. Mean Scores of Responses from Professional Accountants

	Mean	*SD*	*t-Stat*[1]
Relations between environmental issues and professional accountants			
1. Environmental protection is important in Hong Kong	1.94	0.86	–3.6842*
2. Role of accountants is not limited to preparation of financial data	2.67	1.09	0.8822
3. Accountants have responsibility for environmental issues	2.44	0.90	–0.3771
4. Accountants should contribute to companies' environmental sensitivity	2.66	0.85	1.0645
Perception of environmental disclosures			
5. Stakeholders have right to environmental information	2.30	0.91	–1.2430
6. Government should require environmental disclosure by companies	2.84	1.18	1.6299
7. Companies may benefit from environmental disclosure	2.56	0.86	0.3947
Opinion on necessity for environmental reporting guidelines			
8. Environmental disclosure by listed companies in Hong Kong is not adequate	2.22	0.82	–1.9310
9. Professional accountants do not have sufficient guidance on dealing with environmental issues	2.09	0.68	–3.4109*
10. Accounting professional bodies should require environmental disclosure by companies	3.00	1.15	2.4594

Notes: 1. Actual mean scores compared with expected mean values.
2. Significant at 5% level.

On an overall basis, the results indicate that professional accountants are sensitive to environmental issues in Hong Kong, but have no strong feelings for such issues. The results do not provide strong support for disclosure requirement, except that professional bodies should require such disclosures. There is support, although it is not very strong, to provide environmental information to stakeholders and to disclose environmental information on a voluntary basis. These findings are in general conformity with the increasing awareness of environmental protection, and therefore, we cannot reject Hypothesis 2. We conclude however, that although professional accountants are positively inclined toward environmental performance and disclosure by the firms, their support is not very enthusiastic. A further study of Hong Kong CPAs' attitude toward environmental performance and disclosure, versus that of their counterparts in other countries may be desirable.

CONCLUSION

The results of the study provide strong evidence that there is a growing awareness among managers of the need for environmental performance by Hong Kong firms and disclosure of environmental information. There is, however, a gap between managers' perceptions and actual company environmental performance and reporting. A review of financial statements indicated that environmental information is seldom disclosed, and when disclosed, it is brief and mostly descriptive and narrative in nature. It does not provide facts

with regard to the amount of pollution, money spent on pollution abatement activities, or long range plans to abate pollution. The professional accountants' attitude toward disclosure of environmental information is not so strong.

To meet the users' need for environmental information, mandatory disclosure requirements should be established because the voluntary disclosure system is not working. The implementation of disclosure requirements would require guidelines as to what should be disclosed and how, when, and where it should be disclosed. The reliability of environmental information would be enhanced if this information were properly audited. Professional accountants would require professional guidance for the preparation and audit of environmental information. It is imperative that accounting professional bodies develop such guidelines before disclosure of such information is mandated in Hong Kong. It is hoped that the findings concerning Hong Kong may also contribute to an understanding of the perceptions of managers and accounting professionals of environmental performance and reporting in other newly industrialized countries.

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A Comparison of Japanese and U.S. Auditor Decision-making Behavior

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Key words: Audit decisionmaking; audit planning; cross-national comparison; cultural differences; U.S. and Japanese auditors

Abstract: *This study extended research in auditing by examining audit decision making in an international context. Audit decisions made by Japanese and U.S. auditors were compared in areas expected to be affected by cultural differences. Hofstede's measures of national characteristics, specifically, rank consciousness and group orientation, were used to predict the effects of cultural differences. In an audit setting, these differences were expected to result in differences in the acceptance of senior management judgment. Results of hypothesis testing provided evidence of the existence of national differences. The differences, however, appeared to be due to environmental factors rather than the theorized effect of cultural differences.*

Culture is a critical yet sometimes invisible component of daily life. It governs the way in which a person thinks, speaks, and interacts with others. Culture enables an individual to make sense of the world by providing a framework into which experience is organized (Wildavsky, 1989). Within this framework, values, norms, and attitudes dictate the type of information that will be accepted and the manner in which it will be received. The behavioral action which is taken is a direct result of processing within this restricted framework. Because cultures differ, frameworks and the related behavioral responses to specific situations and conditions may also differ.

Business operations are becoming increasingly international and thus occur in multicultural settings. Rendering audit opinions on those operations requires the ability to audit in other cultures. Auditing firms frequently rely upon nationals hired by the firm or on local firms to audit foreign operations due to their language facility and institutional knowledge. If cultural differences cause differences in audit judgment, they need to be considered in audit planning and administration.

While it is recognized that culture affects behavior and that cultural differences exist, few studies have addressed cultural differences in individual business decision-making

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behavior. International auditing research, in particular, has largely produced descriptive studies, with an accompanying focus on national or firm level analyses, (for example, Bavishi, Gangolly and Hussein, 1986; Gilling and Stanton, 1978; Gress, 1985). Needles (1989) reviewed international auditing research over the ten-year period from 1978-1987 and proposed areas of research to address international harmonization questions. He specifically cited a need to investigate differences in the application of auditing procedures resulting from cultural differences.

Japan and the United States (U.S.) are two countries whose cultures differ significantly. Because of the size and extent of their business interactions, U.S. and Japanese auditors are frequently required to work together or to rely on each others' work. Differences in audit judgment arising from cultural differences could be significant.

This study extends research in auditing by providing an empirical comparison of Japanese and U.S. auditor decision-making. By examining the impact of cultural differences on auditor decision making in two countries, knowledge of the effects of specific cultural differences will be increased.

BACKGROUND

Cross-cultural studies have frequently been criticized for the failure to clearly define culture and for the assumption that differences occurring by nationality are equivalent to cultural differences, (for example, Nasif et al., 1991; Sekaran and Snodgrass, 1986). A related complaint is the use of culture as a residual factor rather than providing for its explicit inclusion as an independent variable, (for example, Adler, Doktor and Redding, 1986; Sekaran, 1983).

These problems are the result of the lack of a well-defined framework within which to structure cross-cultural research. A proposed solution in the design of comparative studies is to divide culture into components, or dimensions, and then to relate cultural differences to differences in particular dimensions, (Leung and Bond, 1989). This approach allows the researcher to hypothesize behavioral differences arising from differences in cultural dimensions. It requires that the culture of primary interest and its dimensions be identified.

Within the business environment, two primary cultural influences are national culture and organizational culture, (Barrett and Bass, 1976, p. 1674). National culture, also termed national character, has been defined as:

> . . . the pattern of enduring personality characteristics found among the populations of nations. (Clark, 1990, p. 66).

Organizational culture refers to the

> . . . pattern of shared values and beliefs that help individuals understand organizational functioning and thus provide them norms for behavior in the organization. (Deshpande and Webster, 1989, p. 4).

Although both national and organizational culture are present and impact individual behavior in business situations, national character has been found to have a stronger influence. The definitive study of national culture was performed by Hofstede (1980) during the late 1960's and early 1970's. Data were collected from employees of IBM working in 53 countries and regions. IBM is known for its strong corporate culture and standardized

procedures. Subjects were queried as to managerial attitudes and values. Despite the presence of a strong organizational culture, national character was found to be highly significant in explaining differences in values, assumptions, and goals.

Hofstede's findings were further supported in a series of studies by Laurent of managers attending executive development programs at the European Institute of Business Administration (INSEAD). Laurent (1983) found that beliefs about "proper" managerial practices varied widely across cultures and that the dominant explanatory factor for such beliefs was nationality. Further research (Laurent, 1986) indicated that national differences were not reduced by the presence of a dominant corporate culture and, in fact, appeared to become even more pronounced.

Hofstede (1980) proposed four dimensions of national character: rank consciousness, uncertainty avoidance, group orientation, and masculinity.[1] Two of the dimensions, rank consciousness and group orientation, are of interest due to their potential impact on auditor decision making. Japan and the U.S. differ significantly in rank consciousness and in group orientation. Closer examination of potential differences in audit decisions arising from these cultural differences is important because of the significant business interactions between Japan and the U.S.

HYPOTHESES

Rank Consciousness: Rank consciousness is the degree to which individuals in a society are affected by rank. Rank consciousness influences the choice of language and topics as well as determining appropriate behavior. The Japanese are highly rank conscious with rank determined by group affiliations, (Nakane, 1970).[2] Superiors are respected and obeyed solely because of their rank, (Reischauer, 1988, p. 156). In the U.S., rank or status is largely based on achievements, (Hall and Hall, 1990, p. 149). Recognition is awarded based upon an individual's skills and accomplishments. In this environment, it is appropriate to question individuals, including superiors, in order to determine their level of skill or knowledge.

In the U.S., auditors are accorded a special status as professionals, which enables them to move freely within a client company and to query employees of any status level, (Kell, Boynton and Ziegler, 1986, p. 13). Japanese auditors, in contrast, are awarded status based not upon their profession but upon the related status of the CPA firm which employs them, (Nakane, 1970, pp. 118-119). As audits in Japan are not considered valuable to investors or to businesses, CPA firms (and auditors) have not received the recognition or status given to the profession in the U.S., (Jinnai, 1990; Kagle, Fujimoto and Shimogaki, 1988). This lack of status and preoccupation with rank may result in difficulties in obtaining the information required to complete the audit.

In an audit setting, differences in rank consciousness are expected to affect the acceptance of senior management judgment. U.S. auditors should be more questioning of such judgment than Japanese auditors. As a result, in areas involving senior management judgment, such as estimates, U.S. auditors should assess inherent risk higher and require more audit procedures be performed than Japanese auditors.

Thus, two proposed hypotheses for rank consciousness are:

H1: *The risk level assigned by Japanese auditors to senior management judgment will be less than the risk level assigned by U.S. auditors.*

H2: *The number of audit procedures selected by Japanese auditors to test senior management judgment will be less than the number of audit procedures selected by U.S. auditors.*

Group Orientation: Group orientation is the degree to which the group is emphasized over the individual. For the Japanese, the center of emphasis is the group. The maintenance of group harmony and the avoidance of open confrontation and conflict are considered most important, (Alston, 1986, p. 34; Reischauer, 1988, p. 136). In the U.S., the focus of attention is the individual. Valued skills are those which improve individual performance and achievement. Group participation is valued only to the extent that individuals benefit.

In an audit setting, differences in group orientation are expected to result in differences between Japanese and U.S. auditors in the selection and ranking of audit procedures. Auditors are required to investigate and resolve problems and potential areas of conflict. In the U.S., relevant information is usually obtained by questioning client staff and requesting more documentation. When problems arise, U.S. auditors typically approach employees directly to obtain needed information.

Within the Japanese culture, a direct approach by an auditor, although polite and courteous, could be viewed as confrontational. It would appear as questioning the judgment or actions of the employee. Thus, the Japanese behavioral norms suggest that auditors would avoid direct questioning and other behaviors involving a direct approach. Indirect means of resolution, such as the examination of documents and the performance of analytical procedures, should be the preferred alternatives.

Japanese auditors, therefore, are expected to select fewer audit procedures requiring approaching clients directly and to rank direct procedures lower in importance. Two hypotheses testing group orientation are:

H3: *Japanese auditors will select fewer direct-approach procedures than U.S. auditors.*

H4: *Japanese auditors will rank direct-approach procedures lower in importance than U.S. auditors.*

DESIGN OF STUDY

Research Approach and Dependent Variables: Relevant auditor decisions were elicited by constructing three audit scenarios involving the evaluation of management estimates. These scenarios covered bad debts, construction in progress, and inventory valuation issues (see Appendices A, B, and C). Both U.S. and Japanese auditors were required to make inherent risk assessments and select and rank relevant audit procedures for each scenario. The four dependent variables were (1) inherent risk assessments, (H_1), (2) number of audit procedures selected (H_2), (3) percentage of direct-approach procedures selected (H_3), and (4) importance rankings assigned to procedures selected (H_4).

Independent Variables: A number of factors in addition to cultural differences was expected to affect decision-making behavior. Some of the factors were controlled statistically while others were controlled in the design of the study. Auditor decisions were expected to be a function of national culture, CPA firm affiliation, level of experience, and office affiliation. The nationality variable is used to test the research hypotheses. If nationality is significant and behaves as predicted, the hypothesized effects of culture are confirmed.

CPA firms differ in their approach to audit planning and the manner in which planning is performed. They also differ in the way they perform the audit and the selection of auditing procedures. In addition, auditors' planning judgments may differ depending on experience. Seniors, managers, and partners have different levels of expertise which could influence their decisions. Thus, CPA firm affiliation and experience are two independent variables included to statistically control for these effects. Care was also taken in selecting firms and participants to nonstatistically control for inter- and intra-firm differences due to audit approach, office size, and office location.

Firms and Participants: Subjects consist of audit seniors, managers, and partners from two of the Big Six firms (designated hereafter as Firm 1 and Firm 2) assigned to offices in the U.S. and Japan. Both firms are considered to use highly structured approaches to their audit practice as described by Cushing and Loebbecke (1986), thus minimizing inter-office differences. Participating offices were in large metropolitan areas (Los Angeles, New York, San Francisco, and Tokyo) to reduce differences due to office size and location.

Model for Data Analysis: Simple *t*-test comparisons of the differences in decisions made by U.S. versus Japanese auditors were used in the initial analysis of the data. To eliminate possible confounding effects of firm affiliation and experience, the following fixed-effects linear model was also considered for each scenario:

$$Y_{ijkm} = \mu + \alpha_i + \beta_{j(i)} + \gamma_{k(i)} + (\beta\gamma)_{jk(i)} + \varepsilon_{m(ijk)}$$

where μ is an overall constant, α_i are the effects of *NATION*, $\beta_{j(i)}$ are the *FIRM* effects, $\gamma_{k(i)}$ are the experience *LEVEL* effects, $\beta\gamma_{jk(i)}$ are the *FIRM-LEVEL* interaction effects, and $\varepsilon_{m(ijk)}$ are the random error terms. Historical differences in the development of CPA firms and the CPA profession in the U.S. and Japan necessitate that both the *FIRM* and *LEVEL* variables be considered as nested within *NATION*.

The contributions made by each of the independent variables were assessed by means of a series of incremental *F*-tests. The separate incremental effect of each of the three independent variables was evaluated by adding the independent variable of interest to a regression which already contained the other two independent variables. The incremental *F* statistic was used to evaluate the explanatory power of the added independent variable in the manner described by Neter, Wasserman, and Kutner (1985, p. 747).

Since the *NATION* variable was used to determine if the hypothesized cultural effects were present, it was of primary interest. However, when significant effects for the *FIRM* or *LEVEL* variables were found, pairwise *t*-tests were also utilized to identify the source of the difference.

DATA ANALYSIS

The Sample: Data were collected with test instruments distributed by direct mailings and through contacts in participating offices during Fall, 1993 and Spring, 1994. Responses were received from 227 auditors: 170 U.S. auditors and 57 Japanese auditors. Both U.S. and Japanese samples were split fairly evenly between the two firms. U.S. auditors included 79 from Firm 1 and 91 from Firm 2. Japanese auditors consisted of 26 from Firm 1 and 31 from Firm 2.

Participants varied in terms of age and public accounting experience. The average Japanese respondent was 33 and held 8.6 years of experience. The average U.S. respondent was 30 with 6.4 years of experience.

The U.S. sample contained a larger percentage of seniors (44%) than managers (24%) or partners (32%) reflecting the steeper pyramid structure in U.S. CPA firms. Japanese CPA firms are flatter and the partners take a greater role in audit field work. Thus, 41% of the Japanese respondents were partners, compared to 30% managers and 29% seniors.

Hypothesis 1—Inherent Risk Assessments: Table 1 presents Japanese and U.S. auditors' inherent risk assessments for each of the three scenarios. A comparison of mean responses indicates mixed results, only partially supporting the hypothesized effect of rank consciousness on auditors' skepticism of management estimates. Japanese auditors were significantly more questioning of management in the Bad Debts scenario while U.S. auditors were more questioning in the Construction Project scenario. Inherent risk assessments were not significantly different for the Inventory Valuation case.

When *FIRM* affiliation and experience *LEVEL* variables were considered along with *NATION* in the comprehensive linear model previously described, the *NATION* variable for the Construction scenario became insignificant (see Table 2). Any support for H_1 that was found in Table 1 was eliminated. Only the *LEVEL* variable was significant.

Table 1. T-Test Statistics for Hypothesis 1: Inherent Risk Assessments

Scenario	*U.S.*			*Japan*			*U.S.–Japan*		
	n	*Mean*	*Std. Dev.*	*n*	*Mean*	*Std. Dev.*	*Mean Diff.*	*T-Score*	*P-Value*
A. Bad Debts	163	70.1	18.4	57	79.9	16.2	–9.8	–3.56	.9998
B. Construction Project	163	69.9	19.0	56	66.1	15.4	3.8	1.34	.0901
C. Inventory	163	72.7	17.1	55	73.2	19.5	–.5	–.18	.4300

Note: P-values shown are for one-tailed tests.

Table 2. Tests of Linear Model—Statistics for Hypothesis 1: Inherent Risk Assessments

Main Effects & Interaction	*A. Bad Debts*		*B. Construction Project*	
	*F**	*Signif.*	*F**	*Signif.*
Nation	6.96	$p < .01$	1.28	Not signif.
Firm (within nation)	3.84	$p < .05$	1.84	Not signif.
Level (within nation)	1.73	Not signif.	2.27	$p < .10$
Firm/Level (within nation)	2.69	$p < .05$	1.81	Not signif.

Notes: 1. Adjusted R-squared values for the models were as follows—Scenario A = 11.38%; Scenario B = 4.57%.
2. The overall F-test of the linear model for Hypothesis 1—Scenario C was not significant.

Examination of the regression coefficients reveals that U.S. seniors assigned significantly lower inherent risk assessments to construction projects than U.S. managers or partners. These differences were not apparent among the Japanese seniors, managers, or partners.

For the Bad Debts scenario, the *NATION* variable remained significant but opposite from the hypothesized effect. *FIRM* and *FIRM/LEVEL* variables were also significant. Further *t*-test comparisons reveal differences by level as well as by firm within each nation.

Discussion: Differences in national business environment may have resulted in uniquely national responses to the Bad Debts and Construction scenarios that dominated cultural effects. Within the past decade, both Japan and the U.S. have experienced severe economic consequences related to bad debts and construction projects.

Problems in the Japanese economy resulted in massive bad debt losses during the early 1990's. During a single eight-month period from January through August, 1991, approximately 4,900 bankruptcies occurred involving five trillion yen or U.S.$45 billion (Evans-Garry, 1991). The financial difficulties were widespread, encompassing consumer as well as bank and finance company debt. Because of these problems, bad debts have a particular significance for Japanese auditors and they may be more cautious when auditing doubtful receivables.

Construction projects have a similar "red flag" status for U.S. auditors. Large and well-publicized construction-related losses in the savings and loan industry during the 1980's have resulted in the identification of such projects as high risk, particularly by managers and partners who had experienced these difficulties.

Hypothesis 2—Number of Audit Procedures Selected: The mean number of audit procedures selected by U.S. and Japanese auditors in each of the three scenarios is shown in Table 3. Results support the hypothesized effect. The mean number of audit procedures required by U.S. auditors significantly exceeded the mean number required by Japanese auditors in every scenario. As predicted, U.S. auditors were apparently less accepting of management judgment than Japanese auditors.

The cultural effect remained even after including the *FIRM* and *LEVEL* variables in conjunction with the *NATION* variable in a comprehensive regression model. Significant differences by firm, level, and firm by level were also found (see Table 4).

Additional *t*-test comparisons indicated that significant differences in the number of audit procedures selected appeared in only one of the two firms (Firm 2) and at the manager and partner levels. U.S. and Japanese seniors did not significantly differ in the number of audit procedures selected.

Differences among seniors, managers, and partners also appeared within each country. Among U.S. auditors, seniors and managers selected similar numbers of audit procedures while partners selected a greater amount. Among Japanese auditors, the reverse was true.

Table 3. T-Test Statistics for Hypothesis 2: Number of Audit Procedures Selected

Scenario	*U.S.*			*Japan*			*U.S.–Japan*		
	n	*Mean*	*Std. Dev.*	*n*	*Mean*	*Std. Dev.*	*Mean Diff.*	*T-Score*	*P-Value*
A. Bad Debts	168	7.1	2.2	57	5.7	2.0	1.4	4.16	.0001
B. Construction Project	168	8.2	1.9	56	6.2	2.4	2.0	5.60	.0001
C. Inventory	169	7.9	2.0	56	6.2	2.2	1.7	5.53	.0001

Note: P-values shown are for one-tailed tests.

Table 4. Tests of Linear Model—Statistics for Hypothesis 2: Number of Audit Procedures Selected

Main Effects & Interaction	A. Bad Debts		B. Construction Project	
	F^*	*Signif.*	F^*	*Signif.*
Nation	17.91	$p < .0000$	69.34	$p < .0000$
Firm (within nation)	5.19	$p < .01$	11.08	$p < .0000$
Level (within nation)	4.35	$p < .01$	7.67	$p < .0000$
Firm/Level (within nation)	.90	Not signif.	2.43	$p < .05$

Main Effects & Interaction	C. Inventory	
Nation	27.79	$p < .0000$
Firm (within nation)	5.70	$p < .01$
Level (within nation)	2.73	$p < .05$
Firm/Level (within nation)	.86	Not signif.

Note: 1. Adjusted R-squared values for the models were as follows—Scenario A = 15.50%; Scenario B = 31.94%; Scenario C = 18.87%.

Seniors selected the most audit procedures while partners and managers selected considerably less.

Discussion: In Hypothesis 1, Japanese auditors considered bad debts to be a greater risk while U.S. auditors assessed inherent risk higher for construction projects. Yet Hypothesis 2 testing revealed that U.S. auditors consistently selected more auditing procedures to perform in every scenario. Thus, the differences in assessed risk were not manifested in comparable differences in the number of audit procedures selected. Neither Japanese nor U.S. auditors appeared to be relating the selection of audit procedures to the inherent risk assessment.

Two environmental factors offer possible explanations for the differences found in the number of audit procedures selected. The first is litigation risk. Auditors in the U.S. face a relatively unique environmental challenge in the form of extremely high litigation risk. Japanese auditors, in comparison, face little, if any, risk of lawsuits arising from audit failures. The second environmental factor is cost constraint. Japanese auditors operate within a regulated fee environment which has maintained audit fees at relatively low levels. While U.S. auditors also operate in a highly competitive and cost-conscious environment, fees are determined by bids based on expected completion time. Higher litigation risk influences such time estimates as do generally accepted auditing standards.

Hypothesis 3—Direct-Approach Procedures Selected: The use of direct-approach procedures was measured by the number of direct-approach procedures selected and the percentage of direct-approach procedures selected. The number of direct-approach procedures selected mirrored the total number of procedures selected as presented above. U.S. auditors selected more direct-approach procedures than Japanese auditors becuase they selected more procedures overall. Therefore, only the percentage results are shown in Table 5 and discussed.

U.S. and Japanese auditors did not differ significantly in the percentage of direct-approach procedures selected. Results were consistent across all three scenarios.

The comprehensive regression including *NATION*, *FIRM*, and *LEVEL* variables as shown in Table 6 provided slightly different results in the case of the Bad Debts scenario. The *NATION* variable became significant and *FIRM* differences also appeared.

Table 5. T-Test Statistics for Hypothesis 3: Percentage of Direct-Approach Procedures Selected

Scenario	U.S.			Japan			U.S.–Japan		
	n	*Mean*	*Std. Dev.*	*n*	*Mean*	*Std. Dev.*	*Mean Diff.*	*T-Score*	*P-Value*
A. Bad Debts	168	48.7%	30.3%	56	45.8%	28.4%	2.9%	.64	.2611
B. Construction Project	167	50.5%	14.2%	55	50.2%	18.5%	.3%	.11	.4567
C. Inventory	169	53.8%	10.4%	55	55.2%	24.3%	−1.4%	−.44	.6679

Note: P-values shown are for one-tailed tests.

As predicted, U.S. auditors selected a higher percentage of direct-approach procedures to audit bad debts. Greater use of direct-approach procedures was also found among the auditors of Firm 1.

Support for Hypothesis 3 required that U.S. auditors select more direct-approach procedures than indirect-approach procedures compared to Japanese auditors. This support was only partially obtained. While U.S. auditors selected more direct-approach procedures in absolute terms, they only selected a higher percentage of direct-approach procedures in one of the three scenarios. As a result, Hypothesis 3 was not supported.

Hypothesis 4—Ranking of Audit Procedures Selected: In the test of Hypothesis 4, auditors were required to indicate the importance of the procedures selected by ranking them from 0 to 10. Review of the data indicated potential differences in the use of numbers by Japanese and U.S. auditors.

Prior research has found differences in two areas. Stening and Everett (1984) found that the Japanese had a greater tendency to select the midpoint response. Further, Hofstede (1980) found that U.S. subjects rated everything as more important when compared to Japanese subjects.

Two tests were performed to determine whether significant differences in the use of numbers did indeed exist. A z-test of significance revealed that the proportion of "rank = 5" responses by U.S. and Japanese auditors was not equal (p-value = .0001). A t-test of the difference in the mean importance ranking assigned to all selected procedures was also performed. As found by Hofstede, U.S. auditors ranked all procedures as more important when compared to Japanese auditors (p-value = .0374).

Because of these differences, the importance rankings of Japanese and U.S. auditors could not be compared directly. Instead, the difference between rankings of direct-approach and indirect-approach procedures was analyzed separately for U.S. and Japanese auditors. Results of t-tests of significance appear in Table 7.

U.S. auditors were expected to prefer direct-approach procedures and, therefore, to rank them higher in importance than indirect-approach procedures. Hypothesis 4 testing

Table 6. Tests of Linear Model—Statistics for Hypothesis 3: Percentage of Direct-Approach Procedures Selected

Main Effects & Interaction	*A. Bad Debts*	
	*F**	*Signif.*
Nation	5.96	$p < .05$
Firm (within nation)	3.27	$p < .05$
Level (within nation)	1.96	Not signif.
Firm/Level (within nation)	2.33	$p < .10$

Notes: 1. Adjusted R-squared values for Scenario A was 6.86%.
2. The overall F-tests of the linear model for Hypothesis 3—Scenarios B and C were not significant.

revealed the expected preference for direct-approach procedures in the Construction project and the Inventory scenario. However, only the difference in the Inventory scenario was significant. In the Bad Debts scenario the U.S. auditors preferred indirect-approach procedures. Japanese auditors, in turn, were expected to prefer indirect-approach procedures. This preference was significantly evidenced in the Bad Debts scenario. The reverse appeared in the Inventory and Construction scenarios where strong preferences for direct-approach procedures were indicated.

FINDINGS AND IMPLICATIONS FOR PRACTICE AND RESEARCH

Overall, the cultural differences proposed by Hofstede were not supported by this field study. While differences were found between the U.S. and Japanese auditors, they can be explained by environmental factors rather than the specific cultural differences targeted in this study. The finding of national differences, however, has implications for the planning of international engagements.

National differences appeared in the assignment of risk to audit areas and the number of audit procedures selected. These differences arose from differences in the business environments in each country. Reliance upon a single office's judgment in a multi-office audit may result in resources being expended unnecessarily in one audit area while insufficient resources are devoted to another area. To reduce the risk of inappropriate resource allocation, multi-office teams should plan the audit.

The significant differences that were found appeared to be present in only one of the two firms. Evidence of national differences in audit judgment provides a potential measure of each firm's internal standardization efforts. The lack of differences between Firm 1's U.S. and Japanese auditors appears to reflect a high degree of standardization of auditor judgment on an international basis. The same degree of standardization was not apparent in the auditors of Firm 2. Thus, to ensure the uniform provision of services on an international basis, firms should seek to standardize administrative procedures and controls as well as training. Researchers may provide assistance by closely examining existing policies and the nature and extent of the firms' current international training programs to better assess the effectiveness of such methods.

Table 7. T-Test Statistics for Hypothesis 4: Mean Difference in Importance Ranking

Scenario	*Expected Sign*	*n*	*Mean*	*Std. Dev.*	*T-Score*	*P-Value*
U.S.						
A. Bad Debts	+	170	–.5234	1.6113	–4.24	.9999
B. Construction Project	+	170	.0352	1.6629	.28	.3914
C. Inventory	+	170	.3333	1.6620	2.62	.0048
Japan						
A. Bad Debts	–	56	–.7018	3.6413	–1.44	.0774
B. Construction Project	–	56	.2467	1.7386	1.06	.8536
C. Inventory	–	56	.9289	2.9330	2.37	.9894

Notes: 1. Mean difference is calculated as the mean ranking assigned to selected direct-approach procedures minus the mean ranking assigned to selected indirect-approach procedures.

2. P-values shown are for one-tailed tests. Because the expected signs for U.S. and Japanese auditors were opposite, one-tailed tests for each group are opposite as well.

Results indicated that national differences in audit judgment appeared across functional levels. The differing performance of seniors, managers, and partners may reflect changes in training programs, education, and internationalization efforts within the firms. Differences found appeared primarily at the manager and partner levels. No significant differences appeared among seniors. This lack of differences is potentially attributed to recent training efforts made by Big Six firms to ensure adequate service for their multinational clients. Differences in audit judgment which appeared at the manager and partner levels may reflect the lack of similar training for upper management and the need for more or different training to overcome prior learning. A related research question is the identification of the nature and quantity of training currently provided to managers and partners so that deficiencies may be identified and addressed.

Although not the planned focus, certain cultural differences were identified in this study. U.S. and Japanese auditors were found to use numbers differently when ranking the importance of auditing procedures. U.S. subjects ranked all procedures as more important than the Japanese. The Japanese also had a significantly greater tendency to select the midpoint or neutral response than the U.S. subjects. These national tendencies, however, were not apparent in the inherent risk assessments which also required numeric assignments.

Why would cultural differences in the use of numbers be present in some but not all of the numbers tested? Ho and Chang (1994) theorize that cultural differences are overridden in cases requiring the application of professional knowledge. Their hypothesis was supported in tests of Taiwanese and U.S. auditors making diagnostic probability judgments. Numeric inherent risk assessments are planning judgments commonly made by auditors. Auditors are trained to consider relevant factors and then assess the inherent risk of a material misstatement occurring as a result of those factors. Thus, developing a numeric risk assessment is an area involving professional knowledge. The ranking of auditing procedures, however, is not a typical audit task. The assignment of a numeric importance ranking to an individual procedure, therefore, is not a task requiring the application of professional knowledge.

The findings discussed previously are important for methodological reasons. Differing national responses to the scenarios and differences in the use of numbers affect the design of future research experiments involving U.S. and Japanese auditors. Researchers should thoroughly investigate potential scenarios in terms of prior national exposure to avoid confounded results due to recent economic or business occurrences within each country. Researchers should also plan to use harder measures, which are not subject to scaling differences, if a direct comparison of the ratings of Japanese and U.S. subjects is desired.

Limitations

Limitations of this study include those common to scenario-based research as well as certain sample-based restrictions. Differing data collection methods were utilized for the Japanese auditors of Firms 1 and 2. As a result, differences between the firms may be an unintended product of data collection differences.

Group orientation differences were operationalized as differences in the use of direct-approach versus indirect-approach procedures. Effort was measured in the form of number

of procedures selected. If these operationalizations did not fully reflect the intended constructs, possible inferences are limited.

The R^2 values obtained from the regression analyses ranged from 5 percent to 32 percent, which is within the range for research of this type. However, the R^2 values reflect the limited amount of explanatory ability contained within regression models.

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APPENDIX A

Bad Debts Scenario

You are responsible for auditing the allowance for bad debts. The client is a continuing client in the import/export business. In reviewing the list of accounts receivable, you discover accounts for new customers in Indonesia. The amounts involved are significant to the income statement. The accounts are the result of an extensive marketing campaign to increase sales in this new territory. The audit is being performed six weeks after year end.

The sales were made during the latter part of the current year. No payments have been received since year end. The customers' location and the language differences make communication more difficult. For example, you are uncertain that positive confirmation requests will be returned. Senior management has informed you that all balances on these new accounts are considered collectible. They do not believe that a bad debt provision for these accounts is considered necessary.

1. What degree of inherent risk would you assign to the client's allowance for bad debts as it relates to these receivables? **Assign** a value between 0 and 100 percent. 0 represents no risk and 100 represents the highest risk. (Inherent risk is the susceptibility of an account balance to material error without considering any related internal controls.) **Classify** your risk assessment by circling high, moderate, or low.
   Risk Value: __%__ Classification (circle): High Moderate Low

2. Assume that internal control over accounts receivable is evaluated as adequate. This evaluation has been supported by relevant control tests. Which of the following substantive audit procedures would you select to test the adequacy of the allowance for bad debts? **Circle** the letters of the procedures selected. **Indicate** the relative importance of the procedures you have circled by assigning each circled procedure a value from 0 (not important) to 10 (very important).

   a. Review documentation maintained in customer credit files, e.g. credit applications, credit references, approved credit limits.
   b. Ask credit-approval personnel what procedures they followed in researching these new customers. Ask how the credit limits for these customers were established.
   c. Review current and prior writeoff and recovery experience. Test the aging of receivable balances.

d. Discuss the customers with sales staff and management responsible for Indonesian sales. Ascertain whether they are aware of any potential problems with these customers.
e. Perform an overall reasonableness test of accounts receivable, sales, and uncollectible accounts. Determine whether it appears that management's treatment of these accounts is appropriate from an overall viewpoint.
f. Inquire of appropriate personnel whether sales have been made to other foreign countries that would be comparable with Indonesia.
g. Review correspondence and any other documentation received from these customers for evidence of returns, credits, or other problems.
h. Make inquiries of the marketing department as to projected sales for these customers. Inquire as to current plans for growth in the Indonesian market.
i. Research the customers' financial position and stability using external financial sources, e.g. credit bureaus, financial publications, and member firms in Indonesia.
j. Inquire of appropriate personnel the basis for the determination that the balances are fully collectible. Request documentation, if available, to support such assertions.
k. Other: (Describe)

APPENDIX B

Construction Project Scenario

You are responsible for auditing a construction project for a continuing client. The company is a construction general contractor which until recently specialized in commercial office buildings. Because of changes in the real estate market, the company has switched to multi-unit residential complexes. The first large residential project the company has attempted was started and partially completed this year. It is material to current year operations. The audit is being performed six weeks after year end.

The company has adopted the percentage-of-completion method. Actual costs to date along with estimated total costs for the project are used to compute the percentage of completion. The company's chief financial officer has provided estimates of total costs, percentage of completion, and the gross profit to be recognized for the project this year. Because of the importance of the project, the chief financial officer personally supervised the development of the estimates.

1. What degree of inherent risk would you assign to the gross profit estimates? **Assign** a value between 0 and 100 percent. 0 represents no risk and 100 represents the highest risk. (Inherent risk is the susceptibility of an account balance to material error without considering any related internal controls.) **Classify** your risk assessment by circling high, moderate, or low.
Risk Value __%__ Classification (circle): High Moderate Low

2. Assume that internal control over construction contract costs is evaluated as adequate. This evaluation has been supported by relevant control tests. Which of the following substantive audit procedures would you select to test the gross profit estimates? **Circle** the letters of the procedures selected. **Indicate** the relative importance of the procedures you have circled by assigning each circled procedure a value from 0 (not important) to 10 (very important).

a. Discuss with client personnel the assumptions and procedures used in the original estimate of total contract cost at 100% completion.
b. Compare the total cost incurred on other jobs completed during the year to the original cost estimates on those jobs. Evaluate the client's job estimating ability.
c. Review the charges to the job since year end. Determine if material charges have been incurred that would change the total cost estimate.
d. Inquire of appropriate personnel whether the project is over or under budget as to material costs and labor costs.
e. Examine all change orders issued on the project and related cost estimates. Review the contract to determine that the contract value used in determining gross profit is appropriate.
f. Inquire of appropriate personnel whether there are significant unapproved change orders that will affect the cost of the project.
g. Confirm terms of construction contract and billings to date with customer.
h. Discuss estimates of completion with site personnel while touring the construction site. Inquire as to the reasonableness of the estimated date of completion.
i. Talk to engineers to determine the physical percentage of completion. Compare with percentage of completion in terms of cost.
j. Test details of cost incurred to date by reference to supporting documentation. Recompute actual costs, estimated total costs, percentage of completion, and gross profit earned to date.
k. Other: (Describe)

APPENDIX C

Inventory Valuation Scenario

You are responsible for auditing the valuation of inventory for a continuing client in the manufacturing industry. The physical inventory observation and tests of clerical accuracy of the physical inventory summary did not reveal any material errors in the inventory listings. The audit is being performed six weeks after year end.

Approximately 30 percent of the inventory value consists of the product of one of the firm's divisions. Valuation of this product is material to the client's financial statements and significant fluctuations in price have occurred. In prior years a large backlog existed for this product. During prior years the product inventory was valued at cost. This year the firm's backlog for this product has disappeared. Market prices at year end ranged from values above cost to values below cost. Senior management believes that prices will stabilize at the higher market prices. Therefore, no adjustments have been considered necessary to reduce the inventory from cost to lower market values.

1. What degree of inherent risk would you assign to the inventory valuation for this product? **Assign** a value between 0 and 100 percent. 0 represents no risk and 100 represents the highest risk. (Inherent risk is the susceptibility of an account balance to material error without considering any related internal controls.) **Classify** your risk assessment by circling high, moderate, or low.
   Risk Value __%_ Classification (circle): High Moderate Low

2. Assume that internal control over inventory is evaluated as adequate. This evaluation has been supported by relevant control tests. Which of the following substantive audit procedures would you select to test the inventory valuation? **Circle** the letters of the procedures selected. **Indicate** the relative importance of the circled procedures by assigning each circled procedure a value from 0 (not important) to 10 (very important).

   a. Review perpetual records, sales analyses, and other information regarding sales activity of this product during the year and in the subsequent period. Review lost or stolen inventory reports.
   b. Discuss the valuation procedures with appropriate personnel to determine the following: inventory costing methods; accounting policies used; pricing policies and procedures of the company; results of physical observation during the year and their effects on inventory valuation.
   c. Analyze monthly cost of sales, gross profit, turnover, and other appropriate ratios for this product.
   d. Discuss with management the reasons for the sales decline. Inquire as to whether identified factors are expected to impact future sales.
   e. Test the determination of appropriate market values for other inventory items. Evaluate the reasonableness of assumptions and methods used.
   f. Discuss with appropriate personnel the client's method for identifying potential problems in scrap, obsolete, unsalable, slow-moving, or overstocked items in inventory.
   g. Evaluate the impact on inventories of technological changes, outstanding purchase commitments, open sales orders, and the company's marketing plans.
   h. Inquire of the marketing department of the projected sales and prices of significant inventory items.
   i. Verify the computation of unit cost for this product by examining supporting documentation for material and labor costs and reviewing overhead charges for reasonableness.
   j. Inquire of appropriate personnel the basis for the determination that previous price declines were temporary. Request documentation to support such assertions.
   k. Other: (Describe)

NOTES

1. The terminology used by Hofstede differed slightly from that used in this study. Hofstede referred to rank consciousness as "power distance" and group orientation as "individualism."
2. C. Nakane (1970) proposed a theory of social structure for Japanese society based upon rank and group orientation. An individual's place in society was determined by the groups to which they belonged and the rank held within each group.

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The International Journal of Accounting

Ethical Development, Professional Commitment and Rule Observance Attitudes: A Study of Auditors in Taiwan

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Keywords: Auditors—Taiwan; cultural differences; ethical development; individualism/collectivism; professional commitment; rule observance

Abstract: *Professional commitment, ethical development, and attitudes towards following rules for auditors in Taiwan are examined. Taiwanese accountants exhibit relatively high professional commitment, and commitment increases with rank. Accountants with high professional commitment perceive rule observance as more important than do accountants with low commitment. Accountants who perceived rule observance as important were primarily reasoning at conventional levels of moral development, while accountants who perceived rule observance as less important were reasoning at postconventional levels. Rule observance attitudes may mitigate continued ethical development. Higher professional commitment was associated with a higher level of moral reasoning. However, the mean ethical development of accountants was consistent with the postconventional level of ethical development for both high and low professional commitment conditions.*

Today's communication and transportation technologies have facilitated rapid multinational business expansion; an extensive level of international activity is widespread among large corporations (Solomon, Walther and Vargo, 1992, p. 757). As the demand for accounting information in an international context increases, the interactions between accountants in different countries will increase in number and in importance. Increased awareness of similarities and differences in the nature of the professionals across cultures may enhance the effectiveness of these interactions.

The current research attempts to integrate and extend prior research on ethical reasoning and professional commitment by focusing on the relation between professional commitment, ethical development of accountants, and accountants' attitudes towards following rules. Ethical reasoning is a function of developing *personal* values, and professional commitment is concerned with the development of *professional* values. Attitudes toward rules affect ethical reasoning, and assimilation of the rules and standards of the profession

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is a component of professional commitment; this research examines relations among these three variables. Further, these constructs are studied for auditors practicing in Taiwan.

Specifically, this research examines professional commitment, ethical development, and the attitudes as to rule observance of auditors practicing in Taiwan. A cognitive model of ethical development is used to study moral reasoning. Kurtines (1984) noted that most of the research based on cognitive developmental models of moral judgments suffers from a limitation in that the emphasis is on person variables, such as level or stage of moral reasoning. Kurtines suggested that this is an oversimplification of the complex interaction that occurs between the person as a moral agent and the extensive network of socially defined rules and roles that constitute social systems. The research reported here examines moral development in a culture very different from the culture in the United States and includes variables for professional commitment and perceived attitudes as to rule observance.

An important component of professional status is the existence of an ethical base that defines professional conduct (Behrman, 1988). Numerous authors have emphasized the moral commitment aspect of professionalism (e.g., Camenisch, 1983; Kultgen, 1988); many believe that ethics is the cornerstone of public accounting practice (Ponemon, 1988, p. 6). However, ethical values and the behavior of members of the accounting profession may be related to cultural differences. Cohen, Pant and Sharp (1992) stated that cultural differences may limit the effectiveness of an international code of ethics, even within a relatively homogeneous profession such as accounting. To the extent that differing cultural and legal environments foster different levels of professional commitment or different social standards for behavior, accountants in different countries may have different attitudes about the goals and values of the profession.

While a number of studies examine the professional commitment of accountants (eg., Aranya and Ferris, 1984; Aranya, Pollock and Amernic, 1981; Meixner and Bline, 1989), few attempts have been made to integrate the professionalism literature with either the ethical reasoning research or the research on cultures. The current research examines the relationship between professional commitment and ethical development of accountants in Taiwan.

THEORETICAL DEVELOPMENT AND HYPOTHESES

Professional Commitment and Culture

Professional commitment is the relative strength of identification with and involvement in a profession. Professional commitment entails (1) the belief and acceptance of the goals and values of the profession, (2) a willingness to exert effort on its behalf, and (3) a desire to maintain membership in the profession (Aranya et al., 1981; Aranya and Ferris, 1984). Professional commitment is conceptualized in the extant research as a process of socialization into the profession (Larson, 1977). To the extent that cultural and legal constraints differ across countries, professionals may have differing interpretations about professional goals and values, about the nature of effort that should be exerted on behalf of the profession relative to other commitments, and about the importance of membership in the profession relative to other social groups.

Individualism/Collectivism

Perhaps the most important dimension of cultural differences in social behavior is the relative emphasis on individualism versus collectivism (Triandis, 1989, p. 42). While the United States is strongly individualist, much of the Asian-Pacific region, including Taiwan, is collectivist in orientation (Hofstede, 1980, 1991).

In individualist cultures, most of the individual's behaviors are determined by personal goals. The most important relationships are horizontal, that is, relationships between peers, spouses, and friends are seen as more important than relationships between the parent-child. Work attachment is common among individualists, and the emphasis tends to be on task rather than on people.

In collectivist cultures, the individual's behavior is strongly influenced by ingroup goals, and if there is a conflict between personal and group goals, it is considered desirable to place collective goals ahead of personal goals (Triandis, 1989, p. 4). The emphasis is usually on people more than on task. The most important relationships are vertical, such as the parent/child relationship. Family attachment tends to be high in collectivist cultures, and family obligations are deeply felt.

Members of collectivist societies have high loyalty for the organization. Collectivists see competition as occurring among groups, and dislike interpersonal competition within their group. For instance, it is difficult to get groups of professionals belonging to different universities in collectivist cultures to cooperate, because they define intergroup relationships between universities in confrontational terms (Triandis et al., 1988).

The notion of an autonomous profession appears to be based on an individualist value that the members of the profession should not identify with the organization with which they are associated by employment. Rather, professionals should maintain their allegiance to the code of a more abstract, more distant profession. Allegiance is not to a group of people, but to a set of standards (Cohen et al., 1992; McKinnon, 1984; Bollom, 1988; Gaa, 1990). In an individualist society, professionals are expected to make judgments based on professional guidelines; professional judgments are expected to result in the best long-term result for the profession and for the society. This reliance on an individual's professional judgment is contrary to attitudes in collectivist cultures where the expectation is that "group decisions are of higher quality than individual ones" (Hofstede, 1980, p. 224; Cohen et al., 1992).

Hofstede (1991, p. 157) suggested that in an individualist culture, information generated by the accounting system is likely to be taken more seriously and will be considered to be more indispensable than in collectivist cultures. In collectivist cultures, context is critical for interpretation of information, and many other more subtle clues are available to assess the well-being of organizations and the performance of people. A result is less reliance on the explicit information produced by accountants. The accounting profession in collectivist societies is therefore likely to carry lower status, and Hofstede suggested that the work of accountants may be a ritual without practical impact on decisions. If Hofstede's conjectures are correct, a relatively low level of professional commitment may be expected in Taiwan. In a collectivist society, one would predict that loyalty to family and loyalty to an organization would be more important than loyalty to a profession. Additionally, the lower status of the profession suggested by Hofstede would decrease the importance of accounting relative to other ingroups.

Professionalism literature suggests that an individual's professional commitment develops during the process of socialization into a chosen profession when particular emphasis is given to professional values (Larson, 1977). Because professional commitment is conceptualized as a socialization into the profession, those who have been in the profession for a longer period of time are likely to have stronger professional commitment than those just entering the profession. The first hypothesis to be tested, in the null form, is:

H1: *There will be no difference in professional commitment across rank.*

In Taiwan, the accounting profession is subject to a code of professional conduct. Many of the values of the accounting profession are included in this code, and socialization into the profession and the development of professional commitment should include acceptance of the guidelines espoused by the code. In addition to the code, the accounting profession has been associated with an emphasis on techniques and tools. Arlow and Ulrich (1980) posited that accountants are trained in "hard and fast rules." They further believe (Arlow and Ulrich, 1983) that in the United States, exposure to "hard and fast" rules of behavior, including the Code of Professional Conduct, is an important component of an accountant's training and socialization into the accounting profession. Accountants with high professional commitment are therefore expected to place more importance on observance of rules of the profession than are accountants with low professional commitment. The second hypothesis to be tested, in the null form, is:

H2: *There is no relation between rule observance attitudes and professional commitment.*

Cognitive Development Model of Ethical Development

Kohlberg (1958, 1969) used general assumptions and methods that define moral judgments in terms of justice to extend Piaget's (e.g., 1965 [1932], 1970) work with children to the study of cognitive moral development of humans throughout their lives. Kohlberg posited theories of lifelong cognitive development, and expanded the research on moral development to include the idea of progression through developmental stages.

Kohlberg's stage-sequence model defines an hierarchical series of three qualitatively different levels of moral reasoning. The first level is the preconventional level, where the focus is on self and the possibility of punishment. The second level is the conventional level, where the focus is on relationships and societal norms. Conventional moral reasoning is the level attained by the majority of adults in the United States and most other societies (Colby and Kohlberg, 1987). The highest level is postconventional, or principled reasoning, where the focus is on individually-held principles of conscience. The principled level of moral reasoning is characterized by decreased emphasis on rule-oriented behavior. Each of the three levels of development is comprised of two developmental stages (see, for example, Ponemon (1992) for an extended description of the six developmental stages).

The moral development model pioneered by Kohlberg (1969) and extended by Rest (1979a, 1979b, 1986) is *cognitive* in that it attempts to isolate factors people consider important when evaluating a moral situation. As Ponemon (1992, pp. 241-242) notes, the model is *structural* in that it describes an underlying mental process, and *developmental* in that the structure develops within an individual over time. The model is *sequential* in that implicit

in the cognitive development theory is the idea that moral development over time is a monotonically increasing function, that is, for any individual, development through the six stages is a sequential progression.[1] Rest (1979a) notes, however, that while one stage may dominate an individual's reasoning, the individual is never simply at one stage of cognition.

Defining Issues Test as a Measure of Moral Development

While Kohlberg's primary interest was to devise a theoretical system to represent the logic of moral thinking, Rest was also concerned with the development of a valid, reliable measurement instrument that could be used to assess ethical reasoning and to test hypotheses about moral reasoning, and the compilation of a large data base on moral development and moral judgment. Rest (1979a) developed the Defining Issues Test (DIT) as an objective test of ethical development based on the six stages defined by Kohlberg. DIT research is based on the assumption "that developmental stages of moral judgment involve distinctive ways of defining social moral dilemmas and of evaluating crucial issues in them" (Rest, 1979a, p. 85). The output of the DIT is a continuous variable, the *P* score, that is "interpreted as the relative importance a subject gives to principled moral considerations in making a decision about ethical dilemmas" (Rest, 1975b, p. 5.2). Rest (1979a, p. 101) presented results that indicate the *P* score is a good surrogate measurement for locating a subject along the underlying developmental continuum represented by the stages of development.

Various studies using the DIT have been conducted in foreign countries (see Rest, 1986, for a review). The evidence from these studies is that results parallel the original reliability and validity studies performed on United States samples with the original DIT, and the patterns of results in foreign countries are more often similar than dissimilar to the United States studies. At no time were the...

> . . . critical data trends nonsignificant or of a direction different from the data trends in the United States samples. If this type of finding had occurred, then cultural variability as the cause for these differences would have been much more probable. . . While non-Western samples tend to show a flatter rate of developmental increase than Western samples, all samples showed increasing levels of moral judgment in higher age/educational levels. (Rest, 1986, pp. 107-109).

Rule Observance and Ethical Development in Accounting

The accounting profession's emphasis on techniques or tools has been suggested as a variable that may be related to the ethical development of accountants. Trevino (1986) discussed a model of ethical decision making wherein situational and individual moderators interact with an individual's cognitions to determine ethical or unethical behavior. One situational moderator included in the framework is "obedience to authority". Gaa (1992, p. 65) states, "Trevino (1986) and common sense suggest that the connection between *P* score and a tendency to follow rules would be worth knowing about."

Lampe and Finn (1992, p. 55) concluded that the ethical development of auditors reflects "an orientation to internalized compliance with GAAP, GAAS, codes of ethics, and other rules of social order." Lampe and Finn suggested that the level of ethical development of auditors is a function of their orientation to compliance with both professional standards, which relates to professional commitment, and societal standards, which relates to ethical development.

While most adults reason at the conventional level (Colby and Kohlberg, 1987) results indicate that accountants in the United States typically exhibit lower levels of ethical development than other college graduates (Armstrong, 1987; Ponemon, 1988, 1990; Ponemon & Gabhart, 1990; Ponemon & Glazer, 1990; Shaub, 1989). Previous researchers have hypothesized a negative relation between the "hard and fast" rules associated with accounting practice and ethical development (e.g., Lampe and Finn, 1992). This is consistent with the stage-sequence theory of cognitive moral development of Kohlberg and Rest. Stages 3 and 4, which comprise the conventional level of moral reasoning, are characterized by "the morality of law and duty to social order." Strong attitudes about the importance of rule observance may inhibit development beyond the conventional level.

Cultural differences may cause differing interpretations of the Kohlbergian stage-sequence model of moral development. Ma (1988) presented a discussion of the Chinese perspective on moral judgment that is based on the stages defined by Kohlberg. Ma postulated that differences between Chinese and Western perspectives at Stage 4 combine a collectivist and affective perspective versus an individualist and rational perspective. The collectivist perspective postulated by Ma is more rigid at Stage 5, with a greater emphasis on rules and clear values than the individualist. At Stage 6, Ma interprets the Chinese view as a need to comply with nature harmoniously; to achieve autonomy and freedom, one must have few desires and nonvaluative judgment—that is, everyone is treated as ethically neutral. Every opinion is equally good and right. The collectivist interpretation of stages 4 and 5 posited by Ma seems to support the hypothesis that positive attitudes toward rule observance are likely to encourage ethical development to stage 5 rather than to inhibit continued development.

In addition to the individualism/collectivism dimension of cultural differences, Hofstede (1980) also identified uncertainty avoidance as an important determinant of cultural differences. In uncertainty-avoiding societies, there are many formal laws and/or informal rules controlling the rights and duties of employers and employees. In a high uncertainty-avoidance society, there is a strong emotional need for rules, and rule orientation is high. While the United States does not exhibit strong uncertainty avoidance, this is a characteristic of the culture of Taiwan (Hofstede, 1991). Accountants in Taiwan are likely to have strong positive attitudes toward rule observance. However, if the interpretation of the stage-sequence model of ethical development proposed by Ma is correct for the collectivist culture, these strong positive attitudes towards rule observance should not mitigate continued ethical development. Conversely, if, as Rest indicated, differences in DIT scores do not result from cultural differences, high perceived importance of rule observance is likely to be associated with lower levels of ethical development. The third hypothesis to be tested, in the null form, is:

> **H3:** *There is no relation between rule observance attitudes and ethical development.*

Relation Between Ethical Development and Professional Commitment

Shaub et al. (1993) found that the ethical orientation of auditors affects their level of professional commitment, although professional commitment did not influence an auditor's ability to recognize the ethical nature of a decision. Jeffrey and Weatherholt (1996)

presented results that ethical development and professional commitment are significantly related for a sample of United States auditors. Auditors with high professional commitment had *P* Scores consistent with conventional levels of ethical development, while auditors with low professional commitment had *P* Scores consistent with ethical development at postconventional levels. These authors posited that this result occurred because high professional commitment was significantly related to positive attitudes towards rule observance, and rule observance may serve to mitigate ethical development. The fourth hypothesis to be tested is:

> **H4:** *There is no relation between ethical development and level of professional commitment.*

THE STUDY

Subjects

Seventy-five accountants from Taiwan participated in the study. The average age of participants was 29 years, with a standard deviation of 5.5 years. Thirty-four of the participants were male; 41 were female. Of the 75 participants, 31 were staff accountants, 16 were senior accountants, 25 were managers, and 3 were senior managers or partners.

Materials and Procedures

The materials were written in Chinese and were composed of (1) an instruction set, (2) the DIT, (3) an instrument to measure professional commitment, (4) an instrument to measure rule observance attitudes, and (5) additional questions. The instructions outlined the scope of the task and indicated to participants that their participation was voluntary, their responses would be confidential, and the results would be presented in the aggregate. The additional questions elicited personal information regarding involvement in professional organizations, job title, age, and education background.

A Chinese translation of the DIT was used. This translation has been used in previous research in Taiwan, including use in a graduate thesis chaired by James Rest. The remainder of the instrument was translated into Chinese by a group of bilingual Taiwanese graduate students currently studying accounting or law. Two of the Taiwanese students each prepared a translation of the experimental materials. These students then compared their translations and discussed all discrepancies. Additional Taiwanese students then looked at these discrepancies in the translation and mediated the final translation. After these discussions, the final form of the instrument was chosen by the Taiwanese graduate student who is a co-author on this paper.

One hundred instruments were mailed to contacts in Taiwan. These contacts had each been visited by a co-author on the paper and had agreed to distribute the materials in their offices in Taiwan. Subjects were asked to refrain from discussing the instrument until all of the research materials had been returned. Seventy-five completed instruments were returned.

Operationalization of Variables

Moral Development This study used a Chinese translation of the six-story form of the Defining Issues Test (DIT) developed by James Rest (1979a) to measure moral development, which is operationalized by the *P* score.[2] The DIT forms were scored by the Center for the Study of Moral Development at the University of Minnesota. All reported DIT measures were computed by the research group at the University of Minnesota.

Reported test-retest reliabilities of the 6-story version of the DIT have been in the high 0.70s or 0.80s (Rest, 1979b) and Cronbach's alpha index of internal consistency (Cronbach, 1951) has been reported to be in the high 0.70s (Davison and Robbins, 1978). Cronbach's alpha for a particular sample is not a statistic included in the scoring report by the Center for the Study of Moral Development. Rest (personal communication, January 1992) believes that reliabilities based on a larger, more heterogeneous sample are a better measure of the DIT's reliability. Bernardi (1992) examined the formula for computing Cronbach's alpha and noted that the greater the sample variation in the underlying characteristic (e.g., moral development), the higher the computed alpha. Given the homogeneity of DIT *P* scores, a lower Cronbach's alpha would be expected for samples of accounting practitioners than those reported in the validation studies. Further, because the vignettes presented in the DIT are factorially complex and are not equivalent across vignettes, Cronbach's alpha should be considered a lower bound to, rather than an estimate of, reliability (Davison and Robbins, 1978).

The DIT scoring procedure calculates an M score, or meaningless score, for subjects and performs a consistency check on the data. Rest (1990, p. 13) suggested that data for participants with M scores equal to or greater than 8 be eliminated from subsequent analysis. Further, subjects who fail a within-vignette consistency check should also be eliminated from subsequent analysis. Accordingly, data from 4 participants were eliminated from the sample. Rest (1990, p. 15) indicates that it is usual in studies for 5 to 15 percent of the sample to be invalidated. In the current study, 5 percent of the sample was eliminated.

Professional Commitment Professional commitment was measured using a 14-item questionnaire used by Jeffrey and Weatherholt (1996). This scale is based on the scale used by Aranya et al. (1981), Aranya et al. (1986), Morrow and Wirth (1989), and Bline, Duchon and Meixner (1991). Response options consisted of 5-point Likert-type scales ranging from (1) Strongly Agree to (5) Strongly Disagree, which are summed and converted back to the original 5-point scale such that a higher number indicates a greater level of professional commitment. The reliability of the professional commitment measure in this study as measured by Cronbach's alpha (Cronbach, 1951) was 0.86. The English translation of the professional commitment scale items is presented in the Appendix.

Rule Observance The attitude toward rule observance was operationalized using the scale used by Jeffrey and Weatherholt (1996), which was adapted from a scale used by Bacharach and Aiken (1976). Response options consisted of 5-point Likert-type scales ranging from (1) Strongly Agree to (5) Strongly Disagree, which are summed and converted back to the original 5-point scale such that a higher number indicates a greater level of rule observance. The internal consistency as measured by Cronbach's alpha was 0.78 for the composite measure used in this study. The English translation of the rule observance scale items is presented in the Appendix.

Statistical Analysis

The mean professional commitment score was 3.64, with a standard deviation of 0.53. This variable was measured on a 5-point scale whereby 1 would indicate very low professional commitment and 5 would indicate very high professional commitment. Even though Taiwan is a collectivist culture, professional commitment of accountants in Taiwan is high.

To test the first hypothesis, an analysis of variance (ANOVA) was performed. The dependent variable was professional commitment; the independent variable was rank. Because only three of the participants were of a rank above manager, these three subjects were not included in this analysis. The relation between rank and commitment was significant, $p = 0.001$. The ANOVA table is presented in Table 1.

Planned contrasts were used to determine if staff auditors had lower professional commitment than seniors or managers. These results are also presented in Table 1. The differences are in the predicted direction. Further, staff auditors had lower professional commitment than did seniors ($p = 0.006$) or managers ($p = 0.001$).

To test the second hypothesis an ANOVA was performed. Rule observance attitudes was the dependent variable. The independent variable was level of professional commitment; the two levels were high and low. The professional commitment variable was partitioned into high and low commitment using the mean commitment score of 3.64 for this sample.

Rule observance attitudes were significantly different for participants with high professional commitment when compared to participants with low professional commitment ($p = 0.001$). Examination of the mean rule observance scores showed that accountants with high commitment had more positive attitudes as to rule observance than did accountants with low commitment. These results are presented in Table 2.

Table 1. Analysis of Variance: Professional Commitment by Rank

Analysis of Variance				
Source of Variation	*DF*	*Mean Square*	*F*	*Significance of F*
Between Groups	2	1.3330	8.08	0.001
Within Groups	60	0.1649		
Total	62			
Contrasts				
				Significance of F
Staff vs. Seniors				0.006
Staff vs. Managers				0.001
Seniors vs. Managers				0.906
Mean and Standard Deviation of Professional Commitment				
		Mean		*Standard Deviation*
Staff		3.49		0.44
Seniors		3.91		0.36
Managers		3.90		0.37

Table 2. Analysis of Variance:
Rule Observance by Level of Professional Commitment

		Analysis of Variance		
Source of Variation	*DF*	*Mean Square*	*F*	*Significance of F*
Between Groups	1	2.7833	11.57	0.011
Within Groups	69	0.2405		
Total	71			

Mean and Standard Deviation, Rule Observance

	Mean	*Standard Deviation*
High Commitment	4.04	.51
Low Commitment	3.64	.47

Perceived rule observance had a mean of 3.82 measured on a scale where 1 would be low emphasis on rule observance and 5 would be high emphasis on rule observance. In general, Taiwanese accountants perceived rule observance as very important.

A 2X2 ANOVA was performed to test the third and fourth hypotheses. Participant scores for rule observance were partitioned into high and low attitudes toward rule observance using the mean rule observance score, and this was the first independent variable in the ANOVA. The second independent variable was the categorical professional commitment variable with two levels, high commitment and low commitment. The dependent variable was the *P* Score. The main effect for rule observance was significant (p = .002). These results are presented in Table 3.

Examination of the table of means presented with Table 3 indicates that the *P* Score is lower for subjects who perceive rule observance to be very important than it is for subjects who perceive rule observance to be less important.

P Scores between 27.6 and 41.5 are generally associated with the conventional level of moral development (Rest, 1990, p. 21), while scores of 41.6 and above are associated with the postconventional level. Taiwanese accountants who perceive rule observance as less

Table 3. Analysis of Variance:
P Score by Rule Observance Attitudes and Level of Professional Commitment

		Analysis of Variance		
Source of Variation	*DF*	*Mean Square*	*F*	*Significance of F*
Main Effects				
Rule Observance	1	1233.66	10.916	0.002
Professional Commitment	1	661.89	5.856	0.018
2-Way Interaction				
Rule Observance X Professional Commitment	1	41.29	.365	0.548
Residual	68	113.02		
Total	71	129.12		

Table of Means
P Score

		Professional Commitment	
		Low	*High*
Rule Observance	Low	46.33	51.59
Attitudes	High	35.41	43.99

important have a mean *P* Score of 46.33; this groups seems to be reasoning at the postconventional level. Conversely, the mean *P* Score of 35.41 for those who perceive rule observance as more important indicates they are reasoning at the conventional level. Unlike Ma's (1988) interpretation of the relation between rules and ethical development in the Chinese culture, a strong orientation toward rule observance is associated with lower levels of ethical development; it appears that attitudes towards rules may mitigate continued ethical development. This relationship between attitude towards rules and ethical development is consistent with the results reported by Jeffrey and Weatherholt (1996) for auditors in the United States.

The main effect of professional commitment was also significant ($p = 0.018$). However, Taiwanese accountants with high professional commitment also had higher *P* Scores. While there was a significant difference between the high and low commitment groups, both groups exhibited mean *P* Scores above 41.6. The mean *P* Score for each group is therefore associated with reasoning at the postconventional level. The emphasis on rules often associated with the accounting profession does not seem to inhibit the development of moral reasoning beyond the conventional level for accountants in Taiwan.

DISCUSSION AND CONCLUSIONS

While it was expected that accountants from Taiwan would exhibit low professional commitment, results indicate that professional commitment is in fact high among Taiwanese accountants. Mean professional commitment in this study was 3.64. Further research should examine commitment to the profession relative to commitment to other ingroups, such as the accounting firm, the accounting office, and non-work groups to determine the relative commitment to the profession. It appears that the accounting profession may be perceived as an important ingroup by professionals in some collectivist cultures.

As predicted, there is a significant relation between rank and professional commitment. Professional commitment in Taiwan does seem to develop in the early part of an accountant's career. Professional commitment is also strongly related to rule observance attitudes. Those with high professional commitment believed that rule observance is more important than did those with lower professional commitment.

While Ma's (1988) interpretation of the importance in the Chinese culture of rule observance attitudes in Stages 4 through 6 of the cognitive development model of moral development differs from the explanation of these stages by Rest (1986), it appears that the conventional level of ethical development is associated with high perceived importance of rule observation, while the postconventional level of ethical development is associated with a low perceived importance of rule observation. This finding appears to be consistent with the interpretation of Stages 4 through 6 by Rest (1986). This provides additional evidence that reported differences in ethical development are not merely differences in cultural orientation. Further, rule observance attitudes may be a moderating variable in ethical development for Taiwanese auditors.

While this study did find a significant relation between ethical development and professional commitment, the results differ from those reported by Jeffrey and Weatherholt (1996). The Taiwanese accountants with high professional commitment also exhibited higher levels of ethical development than was true for the Taiwanese accountants with low

professional commitment. Further, both groups of Taiwanese accountants had mean *P* Scores associated with the postconventional level of ethical reasoning. In this study, strong professional ties did not mitigate continued ethical development. However, the Jeffrey and Weatherholt study examined auditors at all ranks within the accounting firm, whereas this study only considered the lower ranks. Research by Ponemon (1992) indicates that accountants who are promoted to senior manager and partner may be those with lower levels of moral development as measured by the DIT. Additional research should address the variables of professional commitment and rank at the senior manager and partner level across cultures. Direct comparison of ethical development and professional commitment across cultures was also beyond the scope of the current study.

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APPENDIX

Items on the Professional Commitment Scale:

1. I feel very loyal to my profession.
2. I am proud to tell others that I am part of my profession.
3. I talk up my profession to my friends as a great field to work in.
4. I am extremely glad that I chose my profession to work in over other careers I was considering at the time I decided on my profession.
5. For me, mine is the best of all possible professions to work in.
6. I really care about the fate of my profession.
7. My profession really inspires the very best in me in the way of job performance.
8. I am willing to put in a great deal of effort beyond that normally expected in order to help make my profession respected.
9. I find that my values and my profession's values are very similar.
10. Deciding to work in my profession was a definite mistake on my part.
11. I would accept almost any job assignment to keep working in this profession.
12. It is difficult for me to agree with the profession's policies.
13. There is not much to gain in sticking with the profession indefinitely.
14. It would take very little change in my present circumstances to get me to change professions.

Items on the Rule Observance Scale:

1. I always stick to the letter of the rules.
2. I always have to follow strict operating procedures at all times.
3. I always check to see that I am following the rules.
4. I expect other accountants to always follow the rules to the letter.
5. Accountants have procedures for every situation.

NOTES

1. This is not to say that ethical behavior is a monotonically increasing function. The cognitive recognition of moral issues involved in a situation does not imply that the best ethical prescription will be chosen nor that action will follow that ethical prescription.
2. Caution must be used in interpreting a *P* score. While the *P* score is a good surrogate measure for locating a subject along the underlying developmental continuum represented by the stages of development, Rest (1979a, 1986) maintains that stage mixtures can occur during the developmental process. Therefore, an individual's progression through the developmental stages is an upward shifting of the distribution of responses. An individual reasoning primarily at the conventional level may also use some preconventional and some postconventional reasoning strategies.

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Possible Factors of the Accuracy of Prospectus Earnings Forecast in Hong Kong

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Key Words: Accounting in Hong Kong; accuracy of prospectus earnings forecast; initial public offering

Abstract: *Among different kinds of public information available for assessing the quality of initial public offering (IPO) candidates, prospectus earnings forecasts (PEF) form a significant subset. This study is a continuation of the efforts of previous international accounting researchers to identify the possible factors of the accuracy of PEF. The data set consists of 110 IPO companies which were floated in the Hong Kong stock market during the years 1990-1992. Results of this study indicate that PEF accuracy in the Hong Kong context tends to increase if the past profit variability is lower, the change in economic conditions is smaller, and the company's listing is more recent.*

Flotation Boom in Recent Years

Starting in May 1991, a flotation boom in the Hong Kong Stock Exchange (HKSE) was triggered by the relaxation of the Rules Governing the Listing Securities (Listing Rules), which reduced the minimum market value of listed companies from HK$100 million to HK$50 million and shortened the trading records of issuing companies from 5 years to 3 years. This phenomenon was intensified by the growing sophistication and internationalization of the equity market, which, together with the continuous drop of the prime interest rate from 11% in April 1990 to 6.5% in July 1992, have encouraged the investment in and speculation of the stock market. An unprecedented spate of new issues or IPOs in Hong Kong occurred since then.

In June 1993, the announcement by the Hong Kong Stock Exchange of a package of modified Listing Rules governing the primary listing of companies incorporated in the Peoples' Republic of China (PRC) added momentum to the already heated Hong Kong stock market. The flotation activity reached its climax the same year with a record high of 63 IPOs, which represented a total increase of 385% in three years, compared to 13 IPOs in 1990.

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The flotation boom became a hot issue and attracted the attention of regulatory bodies, especially after a series of over-subscription of new shares which had tightened the inter-bank liquidity and subsequently forced the Exchange Fund (the Hong Kong Government Reserve) to regulate the unbalanced market by liquidity adjustment measures. Investors and public investment firms had started to question the quality of the new issuing companies as well as their operational and financial performances.

Prospectus Earnings Forecast

The Hong Kong Stock Exchange, in principle, does not require new issuers to make any profit forecasts. However, if the management of the issuing companies and their underwriters opt to disclose their profit forecasts, they should follow the various provisions of the Listing Rules describing the requirements for such forecasts (as required by paragraph 34(2) of Part A and paragraph 29(2) of Part B of Appendix 1 of the Listing Rules). In fact, it is a company's commercial decision for the voluntary inclusion of any profit forecast in the prospectus. The underwriters believe that investors will be more inclined to have a stronger confidence in an issuer if there is a profit forecast available (Hung, 1993). Hence, quite a large proportion of companies going public would provide profit forecasts so as to attract larger subscription rates and to push up the market prices on the listing date. The absence of a forecast can be damaging to the launch of an IPO.

Earnings forecasts of issuing companies have become a topic of criticism recently since some of the listed companies are found to have a wide gap between their actual earnings and what have been forecasted in their respective prospectuses (Kwok, 1994). Therefore, the objective of this study is to investigate the accuracy of PEF made by the IPO companies in Hong Kong. This study is also a continuation of previous research efforts to search for some possible determinants of PEF accuracy in the Hong Kong context. This would help to establish a set of objective criteria to evaluate the reliability of earnings forecasts made in the prospectuses by IPO companies.

LITERATURE REVIEW AND HYPOTHESES

Prior Studies

Many studies have examined the reliability of IPO forecasts (e.g., Firth and Smith, 1992a, 1992b; Mak, 1989; Ferris and Hayes, 1977; Dev and Webb, 1972). These studies have shown that the reliability achieved was not encouraging.

Unlike investing in companies which are already listed, IPO investors are unable to observe a consensus market price. They cannot choose to rely on the general opinion of the market. Thus, accounting figures constitute a fundamental part of the evaluation process by which IPO investors decide whether the subscription price asked by the issuer is warranted. The reliability of profit forecasts will be of important concern to investors. The usefulness of profit forecasts provided by management in the prospectuses has been a cause of regulatory concern in the United States and the United Kingdom for more than a decade. Reliability (i.e., precision) has been regarded as an essential characteristic of the data provided in prospectuses (including forecasts), and as such is one of the main areas of regulatory concern.

Signaling Theory of PEF

When a firm's management decides to raise external capital to finance an investment project, they are more likely to have monopolistic access to information as to the project's future returns than other potential investors. Information asymmetry exists between the sellers and the buyers. Without the transfer of information between the two parties, the market mechanism will fail to an extent that only the lowest quality projects will be offered. On the other hand, buyers will discount the investment project to an unfavourable value. It was termed as Adverse Selection problem by Akerlof (1970).

To alleviate the problem, sellers must signal the value of their projects. According to Milgrom (1981), investors would interpret that any information withheld by the sellers was unfavorable to their projects. Therefore, this behavior would motivate some sellers to make a full disclosure of information on their projects in order to distinguish them from the "poor" quality one.

However, a full disclosure policy is not often adopted by the capital raisers. Verrecchia (1983) tried to explain this phenomenon by suggesting that the cost of disclosure would restrain firms from making full disclosure. The captioned cost include the costs of preparing and disseminating information for buyers' inspection. Moreover, the release of information may force the firms to incur substantial proprietary cost. It is the cost incurred by a company when the release of information has undermined the company's future cash flow. For instance, a labor union may demand a better recruitment package for its members if a company has expressed a favorable five-year earnings forecast. In view of those costs of disclosure, management may only select an optimal threshold level of disclosure, which is determined in conjunction with the buyers' expectations.

The above theories are analogous to real-life situations on new equity financing. First, it is undoubtable that an information asymmetry exists between issuing firms and investors. To relieve the Adverse Selection problem, issuing firms are often willing to disclose extra information, such as optional earnings forecasts, according to their individual threshold of disclosure. As Miller and Modigliani (1958) had suggested, valuation of a particular firm was based on the capitalized value to its future stream of cash flow over time. Earnings forecast can therefore assist the investors to value a new issue.

Second, not all issuing firms will give earnings forecasts because they are subject to different levels of proprietary cost on disclosure. For example, a firm will not furnish PEF if the cost exceeds benefit.

Third, there is a tendency for an issuing firm to exaggerate the quality of its project, and investors can only perceive the real quality with incurring substantial monitoring costs. This "Moral Hazard" problem can be avoided when the issuing firm may risk litigation of negligence if earnings forecast is intentionally misstated (Hughes, 1986). The threat of litigation can be a reason for IPO firms to be more conservative in making PEF.

Possible Determinants of PEF

Previous research by various researchers have identified the following potential determinants of profit forecast accuracy: (1) forecast horizon, (2) company size, (3) financial leverage, (4) past profit variability, (5) general economic conditions prevailing at the time

the prospectus is issued, (6) reporting accountant, (7) industrial classification, (8) year of flotation, (9) issuing house, sponsor and underwriter, (10) type of issue, and (11) the extent to which company directors "manage" profits through their internal decisions, policies, and strategies. Eight variables among the eleven were chosen for this study. The three variables not chosen for this study and the reasons for not choosing them are listed below:

(1) *Issuing house.* The credibility of the sponsors, promoters, underwriters, and accountants is a matter of general concern. Previous researchers have examined the importance of the reputational signaling of agencies and their principals (Simunic and Stein, 1987; Booth and Smith, 1986; Wakeman, 1981). For example, there seems to be a theoretical consensus that highly reputable underwriters are often associated with the more "successful" issuers. However, the reputations of issuing houses/sponsors/underwriters are difficult to classify. There is no consensus regarding their rankings. Thus, it is difficult to test whether high reputation sponsors, promoters and underwriters are associated with superior forecasting accuracy.

In some previous research reports, the number of IPOs in which the issuing house has participated was used as a measure of the quality of the house. However, this may not be correct in the Hong Kong context. Recently, the registration of one well-known sponsor which has taken part in a large number of IPOs during the past few years has been suspended. In contrast, the situation for the reporting accountant is somewhat different, and this variable has been included in this study.

(2) *Type of issue.* This is not an important concern in Hong Kong as the usual type of issue of IPOs is by public offer. Only in very exceptional cases are the IPOs issued by other methods, and such exceptions have been excluded from this study.

(3) *The extent to which company directors "manage" profits through their internal decisions, policies, and strategies.* The collection of data and the method of measurement were quite complicated, and this variable is not included in the scope of this study.

Formulation of Hypotheses

In order to find out the possible determinants of PEF accuracy and to explore their respective relationships, the following hypotheses are constructed:

Forecast Horizon. Traditionally, one would expect a negative correlation between PEF accuracy and forecasting horizons (i.e., accuracy tends to deteriorate with longer horizons). The forecasting process involves uncertainty and risk. The longer the forecast horizon, the more likely the occurrence of unexpected changes. Mak (1989) reported significant correlation between forecast error and forecast horizon at the 0.01 level. Hagerman and Ruland (1979) also found that "the accuracy of management forecasts declines as the horizon is increased". Dev and Webb (1972) further argued that "if it is considered important to avoid failing to meet forecasts, they would be made more conservative as forecast intervals lengthened by increasing the 'contingency discount'." The ultimate forecast error will thus potentially be increased. However, some research reported the opposite. One possible explanation is the longer the forecast period, the greater is the opportunity for management to exercise discretion in maintenance and capital expenditure decisions, thus enabling actual and predicted results to be more closely aligned (Ferris and Hayes, 1977).

Firth and Smith (1992b), however, concluded that the forecast horizon provided little help in explaining the errors; although the variable had the predicted positive sign, it was not statistically significant. It was conjectured that the shorter the forecast horizon, the less time management had to employ the capital raised in the new issue, and this would explain the lack of significance in the relationship between forecast horizon and accuracy.

Despite inconsistencies in previous research findings, the traditional idea is adopted and the following hypothesis is set:

H1: *The shorter the Forecast Horizon, the higher the PEF accuracy.*

Company Size. Larger firms are usually more diversified and have more control over their market settings. They have better information gathering and forecasting systems. Economies of scale operate in their favor. Their forecasts should therefore be more accurate than those of smaller firms. Previous research also suggested that there may be stronger incentives for the management of larger companies to provide more accurate forecasts due to the monitoring mechanisms of external information sources. Hagerman and Ruland (1979) found that forecasts by large firms tend to be more accurate than forecasts by smaller firms.

However, Ferris and Hayes (1977) found the opposite. One potential explanation is that accuracy may be more important in an absolute sense to the management of smaller firms due to their perception that the market may be more tolerant of error on the part of larger companies and therefore greater control over discretionary actions may be exercised by the smaller firm management. Firth and Smith (1992b) found that size was a significant variable in explaining PEF accuracy. They also found a negative relationship between company size and forecast accuracy. Their conclusion was that as larger firms were raising proportionately more capital than their smaller counterparts, their forecasts were more difficult to make. Notwithstanding the different arguments, the following hypothesis is formulated:

H2: *The larger the Company Size, the higher the PEF accuracy.*

Financial Leverage. The financial leverage of a company indicates the portion of the company's profit to be expensed as interest. The interest expense is subject to ever-changing market conditions and involves an element of risk. The higher the financial leverage, the higher the risk faced by the company. One would therefore expect lower PEF accuracy for companies with comparatively high levels of debt. Eddy and Seifert (1992) documented such a phenomenon. To accommodate this factor as a determinant of forecast accuracy, the following hypothesis is constructed:

H3: *The lower the Financial Leverage, the higher the PEF accuracy.*

Past Profit Variability. Past data are important inputs to the forecasting process. For example, most quantitative forecasting models (e.g., time-series analysis) use information on past trends to forecast future trends. If the past record of the company shows large differences between different years, it is likely that the forecasting process is more difficult. The company may be subject to a high risk environment. The product of the company may be very sensitive to some conditions which are subject to cyclical and seasonal changes. Such conditions may include local and global market conditions, interest rate movements, exchange rate movements, or even changes in taste of the customers. There-

fore, the expected accuracy on PEF may be reflected in the variability of earnings from the past records when the earnings variability has incorporated all the above factors into account. Eddy and Seifert (1992) revealed this. To examine this notion, the following hypothesis is set:

> **H4:** *The lower the Past Profit Variability, the higher the PEF accuracy.*

Change in the General Economic Condition. Earlier research has revealed that economy and industry movements are important variables in explaining individual firm performance. The larger the fluctuations in economic activity, the more the absolute error that one would expect in forecasts. Mak (1989) reported significant correlation at the 0.05 level. Gross domestic product (GDP) as published by the Census and Statistics Department of the Hong Kong Government was used in this study as a representation of the general economic condition. Quarterly data were used because this was the shortest period for which data were available. Data were published at 1980 constant dollar market prices. The following hypothesis is formulated:

> **H5:** *The smaller the Change in Economic Condition, the higher the PEF accuracy.*

Reporting Accountant. The credibility issue of the agencies in IPOs has been discussed earlier. In contrast to the issuing houses, sponsors and underwriters, the auditing profession does have a well accepted market segmentation which is based on Big Six status. The dichotomy of the accounting firms into the Big Six and Non Big Six is well established and various arguments have been forwarded to the effect that the Big Six (previously Big Eight) firms are the high quality producers of audits (Simunic and Stein, 1987).

In Hong Kong, most of the listed companies are audited by the Big Six firms. As mentioned at the beginning of this paper, it is required by the Listing Rules that the accounting policies and calculation for the forecast must be reviewed and reported by the reporting accountants and their reports must be identified. Therefore, auditors are involved in the production of profits forecasts appearing in the prospectuses of newly listed companies. Given that a Big Six auditor has been retained in order to add credibility to the new issue, it is hypothesized that Big Six auditors are associated with increased profits forecasting accuracy:

> **H6:** *PEF accuracy tends to be higher if the company's reporting accountant is a member of the Big Six.*

Industrial Classification. Industrial classification may have an association with the level of forecast accuracy; that is, profits for companies in some industries may be inherently more difficult to predict than others. Dev and Webb (1972) found that forecast errors in some industries were significantly less than those for their entire sample of companies. Mak (1989) found industry membership to be a significant variable. However, little explanation had been developed to substantiate why forecast accuracy can be expected to differ across industries. There have also been inconsistent definitions of this variable across studies.

The small number of Hong Kong companies within each industry grouping precludes an analysis of the relationship between narrowly defined industry groupings (e.g., food, textiles, retail) and forecast accuracy. Therefore, the industrial grouping is reduced and

simplified into industrial and non-industrial categories. This classification is based on the postulate that expressions of PEF by industrial companies tend to be more reliable. The underlying reasoning is that length of forecast period is usually restricted to one year in Hong Kong and purchase orders for industrial companies' products are usually lodged a few months in advance of actual sales realization. With the relative short time period, industrial companies are likely to grasp the expected sale level accurately a few months ahead of the actual sale taken place. This leads to the following hypothesis:

H7: *PEF accuracy tends to be higher for Industrial Companies.*

Year of Flotation. Porter (1982) found that the year of forecast was related to forecast accuracy. The year symbolizes the overall economic and political environments at the time of flotation. These include investment opportunities, local and international market conditions, and changes in general perception of the management and investors towards the PEF accuracy. The relaxation of the Listing Rules in mid-1991, as discussed at the beginning of this paper may also have some effect. The "quality" of the IPOs and the IPO's management policies may be different between those which have already obtained the listing status before the relaxation and those after. Our study covers a period of three years from 1990 to 1992, with the relaxation in the middle. As shown before, there were more IPOs in the latter years. In order to compete for the scarce funds available in the market and the perception of the increasing importance of the PEF accuracy, it is hypothesized that:

H8: *The PEF accuracy tends to be higher the later the year of flotation.*

METHODOLOGY

Description of Sample

In this study, the sample consisted of all Hong Kong companies which went public by way of IPOs during the years 1990-1992:

Year	No. of IPOs
1990	10
1991	47
1992	53
Total:	110

Among the 110 sampled IPO companies, most of them were from the manufacturing and the commercial sector, which reflected the true picture of the current situation of the Hong Kong economy.

Definition of Data Terms

Absolute Forecast Error Percentage (AFE): In this study, the "absolute forecast error", which measures the relative deviation of actual earnings from forecast earnings and

gives just the opposite meaning of PEF accuracy, was used to reflect the accuracy of prospectus earnings forecast. The earnings figures are after tax but before extraordinary items. The AFE is measured by:

$$\text{AFE} = \frac{|\,\text{Actual Earnings} - \text{Forecast Earnings}\,|}{\text{Forecast Earnings}} \times 100\%$$

Forecast Horizon (FHOR): Forecast horizon is measured by the number of days between the date of issuance of prospectus and the first year-end date after listing.

Company Size (COSIZE): The company size of a company can either be reflected by its turnover or its total asset value. In this study, the company size of IPO companies is measured by the turnover achieved during the forecast period.

Financial Leverage (FLEV): In this study, financial leverage of IPO companies is measured by the gearing ratio (i.e., Total Liabilities over Total Assets) of the company at the year-end date of the year under forecast.

Past Profit Variability (PPV): This represents the variability of the profit recorded by the IPO company during the three accounting years immediately prior to flotation. PPV is measured by the "Coefficient of Variation" of these three-year figures of "Profit After Tax but Before Extraordinary Items".

Change in Economic Condition (ECON): The Change in the Economic Condition was measured by taking the absolute difference between (1) the average quarterly growth in Gross Domestic Products (GDP) over the period of the forecast, and (2) the average quarterly growth in GDP for the 12 months immediately before the date of the prospectus.

Status of Accounting Firm (ACCT): Accounting firms of respective IPO companies are classified as "Big Six" (represented by the value = 1) and "Non-Big Six" (value = 0).

Industrial Classification (IND): The IPO companies in this study are classified into "Industrial" (represented by value = 1) and "Non-industrial" (value = 0) companies.

Year of Flotation (FYR): Each IPO company was assigned a value of "0", "1" or "2" to represent the year of flotation in 1990, 1991 or 1992 respectively.

Data Collection Procedures

All data in this study were acquired from secondary sources. Financial features of the issuing companies were sourced from their prospectuses. Figures in their annual reports were obtained from the "Mee Pierson Guide to Hong Kong Companies" published by the Edinburgh Financial Publishing and "The Corporate International Company Handbook", both of which included comprehensive and detailed summary figures of the financial results of all local listed companies for the past few years.

Treatment of Data

This study is an attempt to understand the accuracy and bias of the PEF. Each PEF carries an estimate of profit for an accounting year that terminates at the first accounting year end after flotation. By comparing the PEF with the actual profit figures for the specified

fiscal period, the accuracy and bias of the PEFs can be revealed. This comparison was done by calculating and studying the AFE (Absolute Forecast Error) of each IPO company and its distribution among the sample 110 IPO companies. Correlation analysis was then made in order to determine (1) the existence of multi-collinearity among independent variables, and (2) the strength of association between AFE and the continuous independent variables. For the discrete variables such as Accountant Status, Industrial Classification and Year of Flotation, Analysis of Variance (ANOVA) tests were conducted to study their respective relationships with AFE.

In order to test the eight hypotheses, a multiple regression model was developed to theorize Hypotheses 1 to 8. In this model, Absolute Forecast Error (AFE), a non-directional standard was used to signify the forecast accuracy, and reflects the absolute deviation of actual earnings from forecast earnings.

The multiple regression model developed was as follows:

$$AFE = a + b_1FHOR + b_2COSIZE + b_3FLEV + b_4PPV$$

$$+ b_5ECON + b_6ACCT + b_7IND + b_8FYR$$

We then proceeded to conduct a multiple regression analysis. The R^2 and F-statistic have been utilized to test whether the eight independent variables taken together could significantly explain the dependent variable, *Absolute Forecast Error*. The higher the R Square, the higher the percentage of the variation of AFE can be explained by the eight variables. Based on the 0.05 significance level, if the F-ratio is above the corresponding value, one can announce that the regression as a whole is significant. At the same time, t-test with 0.05 significance level was performed to examine which variables are the major factors in determining the Absolute Forecast Error.

RESULTS

Descriptive Statistics

Table 1 shows that among the 110 IPO companies sampled, 60% of them have their AFEs below the value of 0.080 (representing a high level of accuracy) and more than 80% of the sample have AFEs below 0.240. It can be interpreted that a majority of the newly issued companies have reported their actual profit earnings very close to their PEF. Descriptive statistics for all variables in this study are reported in Table 2. Table 3 indicates that companies listed in 1990 tend to have higher AFEs (with a mean of 0.53) than those listed in 1991 and 1992 (with a mean of 0.15). A more detailed analysis on this was made by ANOVA at a later stage.

Correlation Results of Variables

The correlation matrix in Table 4 suggests that no multi-collinearity problem exists among the independent variables in this study. Correlation analysis between *AFE*, the dependent variable, and the continuous independent variables (*FHOR, COSIZE, FLEX,*

Table 1. Distribution of Dependent Variable AFE Absolute Forecast Error (n = 110)

Distribution of AFE	*No. of IPO Co.*	*Cum Percentage*
0 < AFE ≤ 0.040	44	40.0%
0.040 < AFE ≤ 0.080	22	60.0%
0.080 < AFE ≤ 0.120	7	66.4%
0.120 < AFE ≤ 0.160	10	75.5%
0.160 < AFE ≤ 0.200	2	77.3%
0.200 < AFE ≤ 0.240	4	80.9%
0.240 < AFE ≤ 0.280	1	81.8%
0.280 < AFE ≤ 0.320	1	82.7%
0.320 < AFE ≤ 0.360	1	83.6%
0.360 < AFE ≤ 0.400	2	85.5%
0.400 < AFE	16	100.0%

Table 2. Descriptive Statistics of Sample IPO Companies (n = 110)

Variables	*Mean*	*Std. Dev.*	*Minimum*	*Maximum*
AFE	0.18	0.31	0.001	1.793
FHOR	141.31	79.69	1	332
COSIZE	556.39	613.93	2.37	3979.59
FLEV	0.45	0.15	0.071	0.798
PPV	0.40	0.24	0.024	1.216
ECON	0.49	0.54	0.000	2.525

ACCT	*No. of IPO Co. served by:*	*% of IPO Co. served by:*
Big-Six Acct. (=1)	92	84%
Non Big-Six Acct. (=0)	18	16%

IND	*No. of IPO Co. in:*	*% of IPO Co. in:*
Industrial Group (=1)	64	58%
Non-Industrial Group (=0)	46	42%

FYR	*No. of IPO floated in:*	*% of IPO Co. floated in:*
1990 (=0)	10	9%
1991 (=1)	47	43%
1992 (=2)	53	48%

PPV and *ECON*) was conducted to determine the strength of the association between them. One-tailed tests of significance were used since all the hypotheses were directional. The results are presented in Table 5. The results indicate that the sign of the relationships between *AFE* and the independent variables were all as hypothesized except in the case of *FLEV*. Correlations of *AFE* with *FHOR* and *COSIZE* were unexpectedly minimal, at 0.015 and -0.002 respectively. Highly significant relationships were found with the other two variables *PPV* and *ECON*.

Table 3. Distribution of AFE by FYR Flotation Year (n = 110)

FYR	*No. of IPO*	*AFE Mean*	*AFE S.D.*	*AFE Min..*	*AFE Max.*
1990	10	0.53	0.45	0.123	1.573
1991	47	0.15	0.26	0.001	1.418
1992	53	0.15	0.29	0.001	1.793

Table 4. Correlation Matrix of Independent Variables (n = 110)

	FHOR	*COSIZE*	*FLEV*	*PPV*	*ECON*	*ACCT*	*IND*
COSIZE	0.183						
FLEV	0.082	0.342					
PPV	–0.045	0.053	0.168				
ECON	0.447	0.043	–0.026	–0.050			
ACCT	–0.001	0.094	0.124	0.055	–0.038		
IND	–0.045	–0.113	–0.001	0.116	–0.110	–0.026	
FYR	–0.071	0.057	0.028	0.106	–0.5226	0.001	–0.057

Table 5. Correlation Coefficients between AFE and All Other Continuous Independent Variables (n = 110)

Corr. Coefficients	*FHOR*	*COSIZE*	*FLEV*	*PPV*	*ECON*
AFE	0.015 p = 0.44	–0.002 p = 0.49	–0.095 p = 0.16	0.128 p = 0.09	0.291 p = 0.00
Sign postulated by hypothesis:	+	–	+	+	+

Analysis of Variance Tests on ACCT, IND and FYR

As indicated in Table 6, the mean *AFE* in the non-Big Six group at 0.13 is only slightly smaller than that in the Big-Six group at 0.19. In addition, an *F*-value with significance at 0.49 implies that the mean *AFE* is not significantly different between the two groups of IPO companies which use Big-Six or Non-Big Six accountancy firms respectively.

A quick comparison of the two group means of *AFE* for Industrial and Non-Industrial groups in Table 7, at 0.17 and 0.19 respectively, does not indicate results in line with the hypothesis. Again, an *F*-value at a low level of significance implies that Industrial Classification is not a significant variable in determining *AFE*.

Unlike the results of the two previous ANOVA tests on Accountant Status and Industrial Classification, Table 8 indicates that the variable *FYR* is highly significant (at the 0.001 level) in explaining the difference in *AFE* among the three groups. New issues made during 1991-1992 had significantly lower forecast errors than those made in 1990. The underlying reasons are discussed in a later section.

Multiple Regression Model

As presented in Table 9, the multiple regression results display a positive intercept term, which reflects that there is a fixed error component of *AFE*. The regression was very significant at the 0.03 level, explaining 14.8% of the variation in *AFE*.

Table 6. Group Means—AFE by ACCT (Accountant Status)

	Total Population	*ACCT = 0*	*ACCT = 1*
Mean of AFE	0.18	0.13	0.19
(No. of IPO Co.)	(110)	(18)	(92)

Analysis of Variance

Source of Variation	*Sum of Squares*	*DF*	*Mean Square*	*F*	*Significance of F*
Main Effects	0.048	1	0.048	0.479	0.490
ACCT	0.048	1	0.048	0.479	0.490
Explained	0.048	1	0.048	0.479	0.490
Residual	10.747	108	0.100		
Total	10.795	109	0.099		

Table 7. Group Means—AFE by IND (Industrial Classification)

	Total Population	*IND = 0*	*IND = 1*
Mean of AFE	0.18	0.19	0.17
(No. of IPO Co.)	(110)	(46)	(64)

Analysis of Variance

Source of Variation	*Sum of Squares*	*DF*	*Mean Square*	*F*	*Significance of F*
Main Effects	0.010	1	0.010	0.096	0.757
ACCT	0.010	1	0.010	0.096	0.757
Explained	0.010	1	0.010	0.096	0.757
Residual	10.785	108	0.100		
Total	10.795	109	0.099		

Table 8. Group Means—AFE by FYR (Year of Flotation)

	Total Population	*FYR = 0*	*FYR = 1*	*FYR = 2*
Mean of AFE	0.18	0.53	0.15	0.15
(No. of IPO Co.)	(110)	(10)	(47)	(53)

Analysis of Variance

Source of Variation	*Sum of Squares*	*DF*	*Mean Square*	*F*	*Significance of F*
Main Effects	1.321	2	0.660	7.458	0.001
FYR	1.321	2	0.660	7.458	0.001
Explained	1.321	2	0.660	7.458	0.001
Residual	9.474	107	0.089		
Total	10.795	109	0.099		

Table 9. Multiple Regression Results (Dependent Variable = AFE) (n = 110)

	Sign predicted by hypothesis	*Estimated Coeff.*	*Std. Error*	*t-statistic*	*p-value*
Intercept	+ or –	0.2122	0.1524	1.393	0.167
Coeff. of Ind. Variables:					
FHOR	+	0.00043	0.00042	–1.019	0.310
COSIZE	–	0.000019	0.000051	0.366	0.715
FLEV	+	–0.2557	0.2036	–1.256	0.212
PPV	+	0.2144	0.1222	1.755	0.082*
ECON	+	0.1648	0.0725	2.272	0.025**
ACCT	–	0.0666	0.0787	0.846	0.400
IND	–	–0.0147	0.0602	–0.244	0.808
FYR	–	–0.5541	0.0543	–1.020	0.310
Overall F-test					2.18***
R^2					0.148
SE of Estimate					0.302

Notes: * Significant at ∝ = 0.1 (one-tailed test);
** Significant at ∝ = 0.05 (one-tailed test);
*** Significant at ∝ = 0.03

The findings are similar to those of previous studies that Forecast Horizon, Company Size, Financial Leverage, Past Profit Variability, Change in Economic Condition, Accountant Status, Industrial Classification and Year of Flotation as a general whole could not adequately explain the change in forecast error of IPO companies. The explanatory power of the model in this study is slightly lower than the R^2 reported in other studies: 21.9% in the study of Firth and Smith (1992b) and 27.2% in that of Mak (1989). However, some significant variables in explaining forecast accuracy were identified in this study. First, the predicted signs were achieved for four (*PPV, ECON, IND* and *FYR*) out of the eight independent variables. *PPV* was found to be a statistically significant variable at the 0.1 level, and the null hypothesis that the estimated coefficient equals to zero is thus rejected at p = 0.10. The sign of the beta coefficient was positive, indicating that the greater the past profit variability of an IPO company, the larger is its absolute forecast error.

The t-statistic of 2.272 computed for *ECON* exceeded its corresponding critical value at the 0.05 level, indicating that the variable *ECON* is statistically significant. The positive sign of the estimated coefficient is also in line with Hypothesis 5, which predicts that the greater the change in economic condition, the larger will be the forecast error.

Further Attempt: Separate Multiple Regressions

In order to generate a model that could provide greater explanatory power of *AFE* (with greater R^2), it has been attempted to perform "separate" multiple regression analysis. A new multiple regression model was set up using only the dependent variable and the five continuous independent variables (excluding all the discrete variables), as follows:

$$AFE = c + d_1\, FHOR + d_2\, COSIZE + d_3\, FLEV + d_4\, PPV + d_5\, ECON$$

This multiple regression was then performed using data from the whole sample of 110 IPO companies, which yielded an R^2 of 0.132 and an *F*-statistic at the 0.01 significance level. The same regression was again carried out in seven different scenarios as follows:

Scenario 1: when *ACCT*= 0 [among IPO Co. which use non-Big Six]

Scenario 2: when *ACCT*= 1 [among IPO Co. which use Big-Six]

Scenario 3: when *IND* = 0 [among IPO Co. in non-Industrial Gp.]

Scenario 4: when *IND* = 1 [among IPO Co. in Industrial Gp.]

Scenario 5: when *FYR* = 0 [among IPO Co. listed in 1990]

Scenario 6: when *FYR* = 1 [among IPO Co. listed in 1991]

Scenario 7: when *FYR* = 2 [among IPO Co. listed in 1992]

The R^2 obtained from these separate multiple regression analysis under the seven different scenarios were then compared against the original R^2 of 0.132. Table 10 indicated that the greatest R^2 of 0.813 was obtained under Scenario 5 when the new multiple regression model was performed among the IPO companies listed in 1990. This implies that the new model, without the other two discrete predicting variables *ACCT* and *IND*, gives the greatest explanatory power of the variation in *AFE* among IPO companies listed in 1990. This result is in line with that of the ANOVA test on the variable *FYR*.

Another scenario which yielded a great increase in R^2 was Scenario 1. Comparing to the original R^2, the new R^2 of 0.514 implies that when the new multiple regression model is

Table 10. R^2 Computed from Separate Multiple Regressions Under Different Scenarios

	Computed R^2	*Signi. F*	*Original R^2*	*% Change in R^2*
Scenario 1: Non Big-Six Acct.	<u>0.524</u>	0.078	0.132	+297%
Scenario 2: Big-Six Acct.	0.179	0.004	0.132	+35.6%
Scenario 3: Non-Industrial Gp.	0.116	0.401	0.132	–12.1%
Scenario 4: Industrial Gp.	0.225	0.010	0.132	+70.5%
Scenario 5: Listed in 1990	<u>0.813</u>	0.126	0.132	+516%
Scenario 6: Listed in 1991	0.240	0.040	0.132	+81.8%
Scenario 7: Listed in 1992	0.101	0.395	0.132	–23.5%

applied to the IPO companies served by non Big-Six Accountants, it significantly explains 51.4% of the variation in forecast errors.

The new R^2 was also found to have been improved in other scenarios: Scenario 2 (Big-Six Accountants), Scenario 4 (Industrial Group) and Scenario 6 (listed in 1991), by 35.6%, 70.5% and 81.8% respectively. However, the models performed under these three scenarios still could not provide an explanatory power of over 30% of the variation in forecast errors.

DISCUSSION

Table 11 summarizes the findings of this study in respect of the 8 hypotheses developed.

Reliability of Prospectus Earnings Forecast

Results of this study indicated that PEF appears to be quite an accurate indicator in Hong Kong. Sixty percent of the IPO companies in this study have their respective actual earnings for the forecasting year within a deviation of ±8% from PEF. The results are consistent with the findings of Keasay and McGuinness (1991). Some possible reasons may explain this phenomenon.

The first possible explanation is the "reputation preserving" motive of the reporting accountant. In calculating the PEF, the accountant may try to discount the real expected earnings by a safety margin in addition to the cost of capital. This safety margin could then provide a cushion effect when the IPO company eventually achieves a profit figure slightly under the PEF. Moreover, the "not less than" format of PEF disclosure in the prospectuses also assures that the PEF still appears to be valid even under the situations of excess earnings reported.

Table 11. Summary of Findings

Hypothesis	*Variable Concerned*	*Sign Predicted by Hypothesis*	*Finding*
H1	FH or Forecast Horizon	+	I.C.
H2	COSIZE Company Size	–	I.C.
H3	FLEV Financial Leverage	+	I.C.
H4	PPV Past Profit Variability	+	√
H5	ECON Change in Econ. Cond.	+	√
H6	ACCT Accountant Status	–	I.C.
H7	IND Industrial Classification	–	I.C.
H8	FYR Year of Flotation	–	√

Notes: √ = asserts the hypothesis
I.C. = inconclusive

Another explanation on the small deviation of actual profits is related to the flotation boom in recent years. In order to compete for venture capital and attract investors' funds, new issuing companies would make every effort to maintain a favorable level of earnings figures, especially for the financial year end immediately following flotation. They have a strong incentive to ensure that the earnings for that year should fall within the forecast range and meet with the expectations of investors, so that the investors will continue to invest in the companies. This is analogous to the "competitive disclosure hypothesis" put forward by Choi (1973), which suggested that financial disclosure made by new issuing companies would be significantly affected by the competitive forces of the new capital market which they intended to enter. An alternative to this may be manipulation of actual earnings figures by the management of the IPO companies.

In Hong Kong, extraordinary items occur frequently across firms (Lynn and McGuinness, 1995). Furthermore, Hong Kong companies have some latitude in classifying items as extraordinary. This in itself may help PEFs to be a more accurate representation of earnings when expressed in "before extraordinary items" form.

Determinants of the Accuracy of PEF

According to the multiple regression results, Past Profit Variability and Change in Economic Condition are significant determinants. IPO companies with greater past profit variability tend to have higher absolute forecast error. The profit earnings of a company reflects its operating performance during a particular year, which may be affected by various factors such as cyclical and seasonal changes. It may also be related to the unique niches of the particular industry to which it belongs. Therefore the variability of past earnings, which represents the past records of the company and incorporates the above factors into account, may reasonably reflect the degree to which the PEF can be a valid indicator.

This study reaffirmed the findings of earlier research, which suggest that Change in Economic Condition is an important variable in explaining variation in profits. One could expect that the accuracy of prospectus earnings forecast would deteriorate with increasing fluctuations in economic conditions. This is especially true for the Hong Kong context, since the territory has been experiencing a rapid economic boom. Moreover, the Hong Kong economy is highly related to the political situation as it approaches 1997, and future profits of local listed companies become very dependent on the economic and political developments in the coming years.

In line with the results of the ANOVA test on the variable Year of Flotation, the new multiple regression performed among IPO companies listed in 1990 produced the largest R^2 in the study, 0.813, and explains over 80% of the variation in forecast accuracy. This agrees with the ANOVA results which suggest that IPO companies listed in 1991 and 1992 have more accurate prospectus earnings forecast. As mentioned earlier, flotation activities in the Hong Kong Stock Exchange increased largely in 1991 due to the relaxation of listing requirements. This has led to greater competition among IPO companies and thus increased the number of possible occurrences of manipulation of profit figures by their management. Profit forecast error thus becomes smaller for those companies listed since 1991. This also explains why the new multiple regression model generates a greater value of R^2 among the 1990 IPO companies. Manipulation of profit figures in these "1990

companies" is believed to be less common and thus the model could provide greater explanatory power for the variation in forecast accuracy.

The coefficient of Forecast Horizon had a negative sign, which is contrary to the hypothesis that *AFE* increases with longer forecast horizons. One possible reason for this is that the shorter the period to the end of the first financial year, the less time the management of an IPO company has to employ the new issue funds and generate earnings from them; this argument offsets the apparent advantage of a shorter forecast horizon.

In summary, the regression model was developed from factors expected to have systematic influences on forecast error. The greater the systematic influences and the lesser the unsystematic factors, the greater the reliability that can be attributed to PEF. Since the regression model in this study was able to explain only 14.8% of the variation in forecast errors, much of the forecast errors is due to unsystematic IPO specific influences and noise.

CONCLUSION

Although the majority of the sampled IPO companies display a high forecast accuracy, this study is still reluctant to conclude that PEFs are reliable. Attention is specially drawn to the article by Kwok (1994). Kwok suggested that quite a number of new issuing companies have tried to "dress up" profit figures for the first financial year following flotation, in order to maintain the interests of investors in the companies, while the earnings figure for the second financial year reflected a dramatic drop of several times from the first year. Unsophisticated investors who rely on the forecasts in the prospectuses thus suffered loss from investing in these "dishonest" IPO companies.

Kwok's article, together with findings from this study, presents the following questions for future research:

1. To what extent can investors rely on PEF?
2. Shall future profit forecasts in prospectuses, if made mandatory in the Hong Kong Listing Requirements, be extended beyond the forecasting period (i.e., including at least the second financial year following flotation)?

In this context, attention is drawn to one of the proposals under consideration by the Hong Kong Stock Exchange, concerning changes to the listing requirements, to "audit" future profit forecasts. It is also suggested that future research could extend this study to examine the change in profit figures between the first and second years after flotation, in order to explore the occurrences of profit manipulation by new issuing companies.

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Book Reviews

Value Added Reporting: Lessons for the United States *by Ahmed Belkaoui, Quorum Books, New York, 1992, 165 pp. $29.95.*

The value added statement, unlike the income statement, reports the operating performance of a company at a given point in terms of a larger group of capital and labor providers. According to the preface of this book (published approximately four years ago), the value added statement is gaining popularity in the corporate annual reports of the United Kingdom. The preface further states that the book shows that the value added statement can be conveniently derived from the conventional income statement, and is therefore easily adaptable by U.S. companies. According to the author, the book should be of value to a broad cross section of those interested in the future trends of international and multinational accounting, including practicing accountants, business executives, and academics.

Although the author omits this fact, at the time the book was published the value added statement was being included in the annual reports of some companies in countries besides the United Kingdom, notably Germany, Belgium, the Netherlands, and Norway. For example, 1992 annual reports of two companies of Norwegian origin, Hafslund Nycomed and Dyno Industrier A.S., contain the value added statement. Other examples include the 1989 annual report of Robert Bosch GmbH (Germany) and the 1990 annual report of Solvay & Cie S.A. (Belgium). It would, however, be fair to state that overall the experimentation with value added reporting has been bery limited. Currently, no country in the world requires value added disclosures as part of its generally accepted accounting principles. France is the only country that requires value added statements; however, the French mandatory disclosures are not in annual reports, but as part of social responsibility reporting in *Bilan Social.*

According to the information contained in Appendix 1.B (p. 58) of the book, Burchell et al. analyzed the forces that led to the rise of interest in the value added statement in the United Kingdom during the 1970s, and also provided the empirical evidence on the rise and fall of value added reporting. The table below summarizes the results that are based on the Institute of Chartered Accountants in England and Wales' Survey of Published Accounts of 300 companies. The column titled *Number of Companies* in the table shows how many companies (of the 300 surveyed) included the value added statement in their annual reports.

The International Journal of Accounting, Vol. 31, No. 3, pp. 399-404 ISSN: 0020-7063.

Year	*Number of Companies*
1975-76	14
1977-78	67
1978-79	84
1979-80	90
1980-81	88
1981-82	77
1982-83	64

In spite of the fact that the attention given to value added statements has considerably diminished in the United Kingdom since the early 1980s, the author's assertion that the value added statement is gaining popularity in the corporate annual reports of the largest companies in the United Kingdom is surprising. It appears to be inconsistent with the evidence contained in the book, especially Appendix 1.B (pp. 55-66) containing an article by M. Zubaidur Rahman. The article by Mr. Rahman was accepted for publication on May 1, 1990, not too long before publication of the book itself. Had the stated purpose of the book been to explain the derivation of the value added statement from conventional income statement and to discuss its merits, the book would have been deemed to have clearly met its purpose.

The book is divided into four chapters. Chapter 1, Value Added Reporting, takes the reader through a systematic and logical process of deriving the value added statement. Exhibit 1.1 is especially excellent. It contains a numerical example of deriving the value added statement from the conventional income statement of a company. This chapter also discusses gross value added versus net value added concepts. One of the latter sections of the chapter notes that the application of value added statement in the United Kingdom suffer from a lack of uniformity, i.e., there is considerable diversity in practice. The 17 page text of the first chapter is followed by notes, a reading list, and two appendices. The appendices each contain one article and are 45 pages in length.

Chapter 2, Value Added Earnings, Cash Flows, and Takeovers in the United States, is brief, its text covering only nine pages. The chapter analyzes the net value added earnings, and cash flow-based rate of return on total assets of a sample of target firms involved in takeovers between 1977 and 1988. The results of the analysis demonstrate that the value added-based data return on assets shows superior predictability. The net value added-based rate of return on assets indicates clearer and more persistent evidence of the undervaluation and underperformance of target firms compared to their industry average. The chapter makes an important point regarding the usefulness of value added reporting for takeovers.

Chapter 3, The Relationship Between Systematic Risk and Value Added Variables of U.S.-based Firms, discusses a study of a market risk association test. A regression model with market risk as the dependent variable and accounting betas as the independent variables is used to examine the incremental explanatory power of value added risk measures versus conventional accounting risk measures with respect to the variability in market beta. The firms examined in this study represent all New York Stock Exchange and American Stock Exchange companies with available data for the period 1968 to 1987. The initial sample was identified from COMPUSTAT. The elimination of the firms with miss-

ing data reduced the sample size to 103 firms. The results of the study indicate that value added information has considerable explanatory power of market risk that goes far beyond what is provided by earnings or cash flow measures. This is especially true at the individual firm (as opposed to portfolio) level.

Chapter 4, Value Added-Based Financial Analysis, is approximately 16 pages in length, followed by Exhibits 4.2 through 4.4 that cover 39 pages. These Exhibits contain data on Net Value Added, Net Value Added/Total Assets, and Profits/Total Assets, respectively, for some U.S. firms for the period 1983 to 1988. The chapter makes a persuasive case that value-added based financial analysis can be used as a supplement to conventional financial analysis to obtain better insights into, and better evaluation of, financial position, performance, and operations of firms. Many value added-based ratios evaluate certain attributes of firms that either cannot be measured, or cannot be measured as satisfactorily, by using conventional financial analysis. These measures deal with, among others, managerial performance, production efficiency, and research intensity of the company. In this age of global economy and international markets, few would argue that these measures are critical for a firm's ability to compete for survival and growth.

The text of the book is succinct, lucid, and well-documented, with each chapter containing excellent notes and a list of selected readings. It is highly recommended to readers who are interested in learning of the full potential of value added information, especially in predicting risk, and assessing a firm's performance in the areas generally acknowledged to be critical for competing in global markets.

It is unfortunate that the lessons in the U.S., as obviously intended by the author, do not seem to have been learned. This reviewer is unable to find any evidence of wider acceptance of the value added statement, or use of value added information in the U.S. or, for that matter, anywhere else in the world in the 1990s. This certainly is not due to a lack of persuasiveness of the case the author has made for value added reporting. It is perhaps due to the prevailing operating environment for the accounting profession. In the current environment the issues with regulatory/legalistic urgency often seem to preempt serious consideration of the important concepts that have the potential to provide better information for economic decisions.

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Culture and Accounting Education Issues in Developing Countries—A Papua New Guinea Case Study *by Fabian Pok, UBSPD, New Delhi, 204 pp. $20.00.*

The author focuses on the cultural and accounting education issues in developing countries with particular reference to Papua New Guinea (PNG). PNG became an independent state in 1975, and, since independence, the Government has adopted several Five Year Plans. These Plans have laid emphasis on, inter alia, local skilled and professional manpower to achieve rapid economic growth. This emphasis on manpower training associated with public service positions and the allocation of funds for rural and infrastructural deve-

lopment has resulted in the education and training of accountants in tertiary institutions which have not been formally included in the government plans.

At present, because of the relatively low number of graduates from PNG educational institutions, the country has to rely heavily on foreign expertise in accounting and finance. In view of this, the present study has tremendous economic implications. The book aims, in general, to contribute to the development of accounting education in PNG. In specific terms, its *objectives* are to: (a) identify the aims and objectives of a national plan for accounting education for PNG, (b) identify the key inputs required to achieve outcomes which will meet identified aims and objectives, (c) gauge perceptions of the three parties, viz., accounting students, accounting academics and accountants in practice, who are associated with accounting education and training in PNG, regarding aims and objectives and inputs of university-level accounting education in PNG, (d) identify whether perceptions gauged are influenced by cultural issues such as nationality, education, industry subgroup representation, institutions and sponsorship of accounting students, and (e) provide from the perceptions gauged, information regarding which cultural issues have a greater degree of influence on respondents' perceptions regarding accounting education issues in PNG, with a view to enabling policy-makers and other interested parties to consider these cultural issues in their accounting education plans (p. 8).

The book is divided into eight well-written chapters. Chapter 1 serves as an introduction, and outlines the problems, objectives, methodology, research questions, and justification of the study.

Chapter 2 explains the research framework of accounting education and cultural issues and develops research hypotheses. The author also gives a review of selected studies which examine people's perceptions on accounting issues. These studies provide support for the measurement scales and statistical techniques used in the book. They also justify the selection of cultural issues tested subsequently. The research hypotheses take into consideration certain cultural issues, viz., nationality, education and industry subgroups of accountants in practice, accounting academics and accounting students and their perceptions regarding aims/objectives and input issues of accounting in PNG.

In Chapter 3, the author examines accounting education issues in *developed countries* generally and studies relating to the U.S., Britain, and Australia. The aims and input issues of accounting education relating to these developed countries are outlined, and those issues which relate to accounting education problems in any developing country, including PNG, are incorporated into the survey questionnaire. An extensive survey by the author, of the literature on accounting education issues, may provide a handy reference to any one who is interested in international accounting education issues specific to a few developed countries.

In dealing with accounting in *developing countries* (Chapter 4), which is the main thrust of the book, the author successfully covers many important areas, including the transfer of accounting technology to developing countries, and the agents involved; government accounting, specific country accounting studies relating to Latin America, the Middle East, the Indian sub-continent, Africa and Asian-Pacific countries, and issues that concern the accounting profession. According to the author, to improve the role of accounting in economic development, qualified manpower and a strong accounting profession are needed. But many developing countries are lacking in these areas. Again, many of the problems relating to the accounting profession are found to be related to accounting edu-

cation and its inadequacies. Therefore, developing countries should try to improve their accounting education systems. To improve accounting education in the developing countries, including PNG, more investment in education is necessary. One could not agree with him more. Since the book incorporates aspects of national culture, social environment, and economic environment in the context of developing countries, with special reference to PNG, those developing countries in both Asia and Africa which want to resolve problems in the education and training of accountants may therefore find this section useful.

In Chapter 5, the author examines the accounting education issues specific to PNG and sketches an overview of its accounting development from 1800 to 1993. Various subject areas, including government policies, studies in accounting education, development of the accounting profession, the state of accounting education, the profession, and their shortcomings, have received the adequate attention of the author. In PNG, the accounting profession is still in its infancy and accounting education is a recent phenomenon, including accounting programs in two universities. According to the author, in order to help PNG progress, it is necessary to improve accounting education which will need additional resources from the educational sector of the national plan. He also suggests investment of foreign capital for the purpose.

The author then develops a survey questionnaire based on the aims and objectives of the study. The questionnaire is used to examine perceptions of accountants in practice, academic accountants and accounting students. It has two parts--Part A deals with background information (cultural issues) of respondents and Part B deals with perceptions of the three above-mentioned groups of respondents. The questions in Part B are arranged on a five point Likert scale, ranging from 'strongly agree' to 'strongly disagree'. To analyse his data, the author has used descriptive statistics, factor analysis, regression analysis, analysis of variance (ANOVA) and *t*-tests. The results show that between group differences, the three groups agree that the national aim of accounting education is the most important factor to be considered when planning for accounting graduates. There is general agreement between three groups relating to input factors which need modification to upgrade both the quantity and quality of PNG accounting graduates. Between sub-group differences, the most important cultural issues to be considered for planning and implementing education policies are (1) nationality (of the accountants from developed or developing countries or PNG), and (2) education (i.e. whether they received the latest accounting education qualifications in developed or other developing countries or PNG). These two cultural issues need to be considered by policy-makers when developing and implementing accounting education policies in developing countries in general and those in PNG in particular.

Based on the results of his survey research, the author suggests that PNG has three options in formulating policy options regarding the education and training of accountants: (1) develop a national accounting education system including training of local accounting academics, and encourage the development and use of local teaching materials, including textbooks, (2) follow the model of a developed country in the matter of accounting education, or (3) develop a system based on the model of another developing country with a similar environment.

The arrangement of the book is logical and the text is well-presented. References to the existing literature are adequate, particularly with reference to developing countries including PNG. However, discussions in some of the chapters (e.g., accounting education in

developed countries and discussion on statistical techniques) could be condensed to better address the group of academics interested in international accounting. The author also makes little effort to survey research studies done in PNG at the professional institute level or academic level. Research in accounting is one of the important elements of accounting education and it serves as a gateway for the country's development. Lastly, the author fails to critically examine the various options mentioned in the book. A critical analysis of these options for PNG would have provided more useful information. For example, if accounting technology from a developed country cannot be transferred to a developing/underdeveloped country because of cultural differences, then which option would be more desirable for the country?

Overall, the author deserves credit for working on a very important issue in the context of his country--human resource development in the area of accounting. He has been successful in showing the importance of such a study in all developing countries to accelerate the rate of development through effective utilization of available resources. Policy-makers and planners in human resource development in developing countries may find his work helpful, as well as researchers and academics with an interest in international accounting education.

This book forms part of the author's Ph.D. dissertation submitted to the University of New England, Australia (p. vii). Therefore, the Ph.D. Supervision Committee, led by Patrick Hutchingson, also deserves praise for the selection of such an important issue, keeping in view the priority of PNG as a developing country, and also for discussing it effectively.

Reviewed by Bhabatosh Banerjee
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INSTRUCTIONS FOR AUTHORS

AIMS and SCOPE. The aims of *The International Journal of Accounting* are to advance the academic and professional understanding of accounting theory and practice from the international perspective and viewpoint. The *Journal* recognizes that international accounting is influenced by a variety of forces, e.g., governmental, political and economic.

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BOOK REVIEW

The International Journal of Accounting

International Harmonization of Reporting Required by Stock Markets

Jose A. Lainez, Susana Callao and Jose I. Jarne
University of Zaragoza

Key Words: Comparability, degree of requirement, empirical evidence, international reporting requirements, measure of harmonization, stock markets

Abstract: *The 1980s witnessed a significant expansion of financial markets and, more specifically, of stock markets, at a world level. The differences which exist in the economic-accounting environment in which companies operate (legal structure, market development, national policy objectives, cultural factors) result in different procedures when shares are offered to the market, different reporting requirements required by the stock markets, etc. These differences reduce the efficiency of stock markets within an international environment. The importance of this fact has motivated the preparation of this paper, the aim of which is to analyze and quantify, where appropiate, the divergences which exist between the reporting requirements demanded by the stock markets of different countries and the home companies which wish to be quoted on them.*

The 1980s witnessed a significant expansion of financial markets and, more specifically, of stock markets, at a world level. Capital flows circulated with greater fluidity from one country to another by way of the transactions which were executed both in the markets for goods and in the financial markets.[1] This has meant that companies can now seek finance in international markets and it is of interest for them to be quoted on the stock markets of other countries, which requires that they produce financial information for these markets.

The differences which exist in the economic-accounting environment in which companies operate (legal structure, market development, national policy objectives, cultural factors) result in different procedures when shares are offered to the market, different reporting requirements required by the stock markets. These differences reduce the efficiency of stock markets within an international environment.

Within the context of these differences, we consider it necessary to highlight the importance of the diversity which exists with respect to the reporting requirements that are demanded in an international environment by the different stock markets from those companies which wish to be quoted on them, in that some countries require information on

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very specific aspects of the company, whilst others are content with information on more general aspects. This diversity imposes additional costs for companies which wish to be quoted on the stock markets of different countries, due to the different information which must be prepared. It also represents a barrier when such companies turn to the international investor in search of funds.

In our opinion, an objective which must be achieved is the reduction of existing barriers to the international offering of shares. In this sense, a great advance would be if a company which wishes to be quoted on different national stock markets could present a single document to the different jurisdictions in which it proposes to offer its shares; a document which would be sufficient to cover all the necessary reporting requirements. Another alternative would be to use the basic information required in each country, together with an adjustment scheme which allows the said information to be matched with the reporting structure demanded by the country in which a company wishes to be quoted.

The importance of this fact has motivated the preparation of this paper, the aim of which is to analyze and quantify, where appropiate, the divergences which exist between the reporting requirements demanded by the stock markets of different countries from the home companies which wish to be quoted on them.

By way of the comparative study of the reporting requirements demanded by the stock markets of different countries, we plan to cover the following objectives:

- To evaluate the degree of reporting required on the part of the different stock markets from those companies which wish to be quoted on them, testing whether the degrees of requirement are homogeneous at an international level.
- To determine, from amongst the countries which form the object of our study, those whose stock markets are more demanding in the information required from the home companies which wish to participate in them, and ordering these countries in terms of the extent of such demands.
- To identify the reporting requirements which are most exacting in each country.
- To measure, by way of quantitative indicators, the degree of harmonization which exists across each element of the different national reporting requirements.
- To obtain an overall measure of the degree of global harmonization which exists across the different national stock markets in respect to information required to be supplied by home companies.

The geographical scope of this study is, essentially, the member countries of the European Union, but it also extends to other countries which have significant economic activity at an international level. Specifically, we concentrate on the stock markets of the following countries: Australia, Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, Holland, Spain, Switzerland, the United Kingdom and the United States of America.

The comparative analysis refers to the reporting requirements required by the stock markets of these countries, requirements that can be classified into two categories: periodical reporting requirements; and additional reporting requirements upon the offer of shares.

Table 1 reflects a list of reporting requirements which fall within each block, based on the 1991 study carried out by the International Organisation of Securities Commissions (IOSCO), entitled *Comparative Analysis of Disclosure Regimes.*

Table 1. Reporting Requirements Analyzed

Periodical Reporting Requirements

1. Description of the activity conducted by the company and its subsidiaries: details of products and services; number of employees; competitive conditions of the business.
2. Segments and subsidiaries: results, identifiable assets and activities of each segment; details on subsidiaries.
3. General development of the business: general description; form of organization; availability of assets; investments.
4. Financial information on national and foreign operations: results and identifiable assets attributable to geographic areas of the company; information on exports by geographic areas.
5. Description of fixed assets: location and general characteristics.
6. Description of legal proceedings currently in process that may give rise to contingent liabilities.
7. Description of resolutions submitted to shareholders' vote.
8. Information on the capital of the company: dividends; shareholders with significant participation in one class of share; changes in capital; information on the markets on which the shares of the company are quoted.
9. Information on exchange rates: funds received in foreign currency; exposure to exchange rate risk.
10. Exchange controls: influence on the payment of dividends and interest; influence on the export and import of capital.
11. Restrictions on foreign shareholders: the right to possess shares that carry voting rights.
12. Taxation: foreign tax implications for shareholders; description and consequences of the tax treatment of different accounting items.
13. Future prospects. Presentation and analysis of the financial situation and trading results: liquidity, inflation, unusual factors which affect the results; future tendencies; investment obligations; forecast profits.
14. Financial statements: statements which cover more than one accounting period; audited statements; comparative statements; cash-flow statement; information on specific items (goodwill, R+D...).
15. Financial data: sales; total assets; current liabilities; profit or loss per share.
16. Change of auditors and differences with the same: explanation for change; details on disagreements with auditors.
17. Managers and directors: identification; details on services provided and experience in the business.
18. Executive remuneration: details of remuneration and bonuses.
19. Ownership of shares: identification of the owners of shares, specifying amounts; ownership of shares by managers and directors.
20. Transactions between related parties: managers, directors, important shareholders, etc.
21. Documents available upon the request of a party, which the company must preserve during a specified term at the disposition of those who, having the right of access to them, request the same.

Additional reporting requirements for offering documents

1. Information included by reference to other already published reports or available upon request.
2. Risk factors appropriate to a share offer: at a general level and specific to each case.
3. Profit / fixed charges ratio.
4. Distribution of profits.
5. Determination of the offering price of the shares.
6. Dilution: book value before and after the distribution of shares; amount of the dilution.
7. Shareholders who sell their shares: identification and/or relation with the company; ownership before and after the offer of their shares.
8. Plan of the distribution of the shares and the subscribers to the same: identification of subscribers and amount subscribed; relation between subscribers and company; offer period; detail of remuneration to subscribers.
9. Participation of the experts and advisors charged with the promotion of the offer.
10. Significant changes in the financial position or other aspects of the company.
11. Prior experience of the organizers of the offer in similar operations.

METHODOLOGY

The work done by IOSCO, to which we have earlier made reference and which is our starting point in this paper, lists the twenty one items of periodical reporting requirements (PR) and the eleven additional reporting requirements in the case of an offer of shares (OR), breaking down each one of them into the component reporting items.

The extent to which each requirement has to be met in the different countries is indicated by one of the following five levels, placed in order of the force of the requirement:

a. Information required to be presented under legal provisions, either by way of periodical reports or in share offer documents.
b. Information required upon request for quotation or in the share offer document and which is habitually brought up to date on a periodical basis.
c. Information required upon request for quotation or in the share offer document and which is not habitually brought up to date on a periodical basis.
d. Information not required specifically by legal provision but which is habitually published, either as periodical information or as additional information.
e. Information which is neither required nor published.

For the purposes of our study, we have quantified the different degrees of reporting requirement by assigning a numerical scale to the same, such that the strongest degree of requirement (degree a) would correspond with the numerical value (v) = 4, thus obtaining the correspondence showed in Table 2.

The methodology applied can be summarized in the following steps:

1. For each reporting requirement and country, we calculated the weighted average of all the items of information into which these requirements can be analyzed, with the aim of obtaining a numerical average which, in accordance with our scale, indicates the degree of requirement of the stock market regulations of the different countries for each of the specific requirements. This is the data upon which our work was based, that is to say, the degree of requirement attributable globally to each of the reporting requirements in the various countries.

   By way of example, periodical requirement 1, (PR1): "Description of the business," which is composed of 15 items of information (a_1: description of the business performed by the company and its subsidiaries; a_2: indication of products and

Table 2. Quantification of the Different Degrees of Reporting Requirement

Degree of Requirement	*Numerical Value*
a	4
b	3
c	2
d	1
e	0

services, indicating specifically the amount or percentage of income; a_3 through a_{15}). We have assigned a value (v) of 0–4 for each of these items, according to the degree of requirement of the same in each of the 13 countries (C) analyzed.

With this data we calculated, for each country, the weighted average of the 15 items which comprise the PR1; thus, obtaining the indicator of the degree of requirement of periodical requirement 1 in country n [$Ex(PR1)_n$]:

$$Ex(PR1)_n = \sum_{j=1}^{15} v_{j,n} * weight_j;\ n=1,....,13 \tag{1}$$

With:

$$\bullet\ weight_j = \frac{\sum_{n=1}^{13} v_{j,n}}{\sum_{j=1}^{15} \sum_{n=1}^{13} v_{j,n}} \tag{2}$$

- j = 1,...., 15 : items of reporting requirement 1
- n = 1,...., 13 : countries analyzed

Operating in the same fashion for all the reporting requirements, both periodical and additional in the case of a share offering, we obtain the average of the degree of requirements for each one of these requirements for the 13 countries which constitutes our data base; this information is reflected in Appendix 1 and 2.

2. Once this data has been compiled, we proceeded to perform the statistical analysis which allows us to evaluate the level of requirement and harmonization of the information to be supplied by companies to the stock markets of the countries under study. To this end we have performed non-parametric tests, Friedman's and Wilcoxon's tests.[2]

   First, we employed ***Friedman's non-parametric test***, in which the null hypothesis is tested, which will be accepted or rejected to a given level of significance, in our case 5 percent.

   The value of the Friedman statistic, which in our case is distributed as an X^2 with 12 degrees of freedom, was compared with the value at the critical point which, for the said distribution and level of significance, was 21.00. Thus, if the statistical measure is lower than 21.00, then H_o, will be accepted and, if it is higher, it will be rejected, with the alternative hypothesis being accepted (H_1: Not all countries require periodical reporting requirements at the same level).

   The null hypothesis (H_o) to be tested for the analysis of the periodical reporting requirements is:

   H_o: All countries have periodical reporting requirements of the same strenght of enforcement

Subsequently, we employ the same test for reporting requirements in the case of share offering documents, introducing the following null hypothesis:

H_0: All countries require the reporting requirements in offer documents of the same strenght of enforcement

To extend the comparison between the reporting requirements by the stock markets of the countries under study, we applied the ***Wilcoxon's non-parametric test***, which conducted a comparison by pairs of countries, testing the null hypothesis:

H_0: No difference exists in the degree of reporting requirements between the stock markets of countries X and Y

The level of significance we assumed in this test was also 5 percent which, when comparing it with the level of significance which the test for each pair of countries reveals, will allow us to accept or reject the null hypothesis that is being tested.

3. Following the objectives we have set ourselves, that is to say, to evaluate the degree of harmonization which exists in the stock markets of the different countries with respect to the level of reporting requirements that are demanded from companies quoted on them, we use the quantitative indicator proposed by Van der Tas to measure the level of harmonization of accounting methods adopted in different countries.[3].

We have adopted the said indicator, known as the ***Van der Tas C-$_{Index}$***, for our purposes, where it is defined as follows:

$$C = \frac{\left(\sum_{t=0}^{m} a_{t^2}\right) - n}{n^2 - n} \qquad 0 < C < 1 \tag{3}$$

Where: a_t is the number of countries whose level of requirement is t.

t= 0,.....,4; with:

t=0 if the level of requirement varies between 0 and 0,99
t=1 if the level of requirement varies between 1 and 1,99
t=2 if the level of requirement varies between 2 and 2,99
t=3 if the level of requirement varies between 3 and 3,99
t=4 if the level of requirement is 4.
n= number of countries analyzed

We calculated the C-$_{\text{Index}}$ for each one of the reporting requirements, both periodical and additional to be included in share offering documents, with the aim of quantifying the level of harmonization in the requirement for the same when con-

sidered individually. The harmonization is increased if the number of levels of requirement falls. Thus, if the number of countries which observe the same degree of requirement increases, even though the number of levels remains constant or even increases, the harmonization will also be seen to increase.

The indicator as presented varies between values 0 and 1, in such a way that, if the value of the same is 0, this means no harmonization exists and, as this value increases, so the level of harmonization will be seen to increase, with the limit of value 1 corresponding to the maximum level of harmonization.

To complete our objectives, we measured the level of global harmonization which exists between the 13 countries analysed with respect to the degree to which the stock markets require information to be supplied by companies, whether it be periodical or additional for the offer of shares. To this end, we once again employed the Van der Tas $C\text{-}_{Index}$, considering the weighted average of the degree of requirement for the totality of reporting requirements as the level of requirement for each country.

RESULTS

From the application of the earlier described methodology and in relation to the objectives we have set ourselves, we obtained the results summarized below:

Study and Evaluation of the Degree of Reporting Requirement

The first of our objectives was the study and evaluation of the degree of reporting requirement, both periodical and additional in the case of the offering of shares, that exists in the stock market regulations of the 13 countries under consideration. To meet this objective we tested whether differences exist in the degree of the different reporting requirements amongst these 13 countries.

The application of ***Friedman's test*** to the case of periodic reporting requirements has led us to reject the null hypothesis, in that the Friedman statistic takes a value of 87.89, which is clearly higher than the value of the critical point (21.00) at a level of significance of 5 percent. In summary, we accept the alternative hypothesis and thus the degree of periodical reporting requirements to be presented to the stock markets varies significantly from country to country.

With respect to the additional reporting requirements to be offered in share offering documents, the application of the same test leads us to accept the null hypothesis as posed. The value of the Friedman statistic is 19.11, lower than the value at the critical points (21.00). In this way, at the level of significance of 5 percent, we can see that no significant differences exist amongst the countries analyzed with respect to reporting requirements in offer documents.

If we examine the results obtained in both analyses, the rejection of the first null hypothesis (referring to periodical information) and for the acceptance of the second (relative to additional information in offering documents), they can be connected with the objective of the said information. The information which is required in offering documents has a more specific purpose, having to cover more homogeneous reporting needs,

Table 3. Classification in Function of the Degree to Which Reporting Requirements Are Sought

Periodical Requirements	*Offering Requirements*
The United States	The United States
Japan	Canada
The United Kingdom	Japan
Canada	Spain
Spain	Francia
France	The United Kingdom
Germany	Luxembourg
Holland	Holland
Italy	Italy
Australia	Germany
Belgium	Belgium
Luxembourg	Australia
Switzerland	Switzerland

independent of the country in question, than the information of a general and periodical character which is required by the different stock markets.

Classification of Countries

Friedman's test, by way of the individual analysis of the data (in our case, of the levels of requirement) of each one of the stock markets and the allocation of a range to each one of them, allows us to present an ordering of countries in function of the degree of the different reporting requirements, both periodical and in offer documents, which we present in Table 3.

As can be seen, the ordering obtained for both types of reporting requirement are very similar, highlighting the primacy of the United States, as well as the fact that Switzerland finds itself at the bottom of both classifications.

Comparison of Degree of Reporting Requirements by Pairs of Countries

Similarly, we have applied ***Wilcoxon's test*** to extend the comparison between reporting requirements on the part of the stock markets of the countries in question; the results are shown in Tables 4 and 5.

These should be interpreted in such a way that the greater the Wilcoxon index for a specified pair of countries, the greater is the correlation between them and, therefore, it should be understood that the differences in the degree of reporting requirements by the stock markets of these two countries is less significant. From the results we have obtained, emphasis should be placed on the following:

With respect to periodical reporting requirements:

- The reporting requirements of the Swiss Stock Market differ significantly from the rest;
- The United States also differs from the practical totality of the other countries,

Table 4. Results of the Wilcoxon's Test: Periodical Requirements

	AUS	*BEL*	*CAN*	*FRA*	*GER*	*ITA*	*JAP*	*LUX*	*HOL*	*SPA*	*SWZ*	*U.K*	*USA*
AUS	1.000												
BEL	0.831	1.000											
CAN	0.051	0.031	1.000										
FRA	0.036	0.001	0.495	1.000									
GER	0.623	0.105	0.148	0.012	1.000								
ITA	0.352	0.098	0.527	0.107	0.833	1.000							
JAP	0.004	0.000	0.124	0.012	0.001	0.003	1.000						
LUX	0.542	0.724	0.031	0.001	0.055	0.043	0.000	1.000					
HOL	0.641	0.278	0.142	0.009	0.875	0.753	0.002	0.124	1.000				
SPA	0.046	0.003	0.958	0.687	0.023	0.019	0.014	0.000	0.019	1.000			
SWZ	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000		
U.K	0.008	0.004	0.930	0.740	0.011	0.177	0.049	0.001	0.012	0.856	0.000	1.000	
USA	0.003	0.001	0.084	0.012	0.006	0.009	0.789	0.001	0.005	0.030	0.000	0.039	1.000

Table 5. Results of the Wilcoxon's Test: Offering Requirements

	AUS	*BEL*	*CAN*	*FRA*	*GER*	*ITA*	*JAP*	*LUX*	*HOL*	*SPA*	*SWZ*	*U.K*	*USA*
AUS	1.000												
BEL	0.718	1.000											
CAN	0.075	0.125	1.000										
FRA	0.441	0.500	0.125	1.000									
GER	0.718	1.000	0.125	0.500	1.000								
ITA	0.718	1.000	0.125	0.500	1.000	1.000							
JAP	0.250	0.250	0.500	0.625	0.250	0.250	1.000						
LUX	0.640	1.000	0.250	1.000	1.000	1.000	0.250	1.000					
HOL	0.640	1.000	0.125	0.500	1.000	1.000	0.125	1.000	1.000				
SPA	0.374	0.125	0.250	0.875	0.125	0.250	0.875	0.625	0.312	1.000			
SWZ	0.281	0.125	0.007	0.031	0.125	0.125	0.031	0.062	0.062	0.015	1.000		
U.K	0.343	0.625	0.125	0.812	0.625	0.875	0.375	1.000	0.687	0.343	0.031	1.000	
USA	0.007	0.062	0.500	0.031	0.062	0.062	0.250	0.093	0.046	0.125	0.004	0.062	1.000

except Canada and Japan (who themselves differ from almost all the other countries); and

- The degree of reporting requirements of Canada, France, Spain and United Kingdom, is very similar. These countries have a high requirement index, as is reflected in the ordering in Table 3. However, all of them differ significantly from the other European countries, as well as from Japan and the United States.

With respect to the periodical requirements in offer documents:

- In the first place, those differences which exist are much smaller than in the case of periodical reporting requirements;
- Switzerland and the United States continue to appear as countries with important differences as regards the level of reporting requirements (although in opposing positions within the scale of requirements);
- In general, the countries of the European Union appear with a similar level of

Table 6. Values of the Van der Tas $C\text{-}_{Index}$ Indicator

Requirement	$C\text{-}_{Index}$	*Requirement*	$C\text{-}_{Index}$
PR1	0.32	OR1	0.23
PR2	0.40	OR2	0.85
PR3	0.38	OR3	0.62
PR4	0.17	OR4	0.72
PR5	0.26	OR5	0.47
PR6	0.38	OR6	0.47
PR7	1.00	OR7	0.72
PR8	0.38	OR8	0.41
PR9	0.40	OR9	0.49
PR10	0.40	OR10	1.00
PR11	0.23	OR11	0.72
PR12	0.23		
PR13	0.59		
PR14	0.85		
PR15	0.72		
PR16	0.40		
PR17	0.33		
PR18	0.59		
PR19	0.35		
PR20	0.38		
PR21	0.44		

requirement, highlighting the greater homogenity of countries, such as Luxembourg, Belgium, Holland, Italy and Germany.

Measurement of Harmonization Level

Another of the objectives we have set in this paper is to measure the harmonization that exists in the degree of requirement of each one of the reporting requirements analyzed for the countries which are the object of this study. To this end, and as we have already stated in the Section devoted to methodology, we have employed the ***C-Index*** quantitative indicator as proposed by ***Van der Tas.***

The results of calculating the said indicator for each one of the requirements, both for periodical information and for additional information to be included in share offer documents, are reported in Table 6.

From the indicators obtained, attention should particularly be focused on the following aspects:

On the periodical reporting requirements:

- The requirements where we can note greater harmonization, so far as the degree of requirement is concerned, are: PR7 “Description of resolutions submitted to shareholders' vote”; PR14 “Financial statements” and PR15 “Financial data selected.” Note that PR7 reaches the maximum level of harmonization, that is to say 1, meaning that all countries require the said information to the same degree;
- The lowest degree of harmonization can be found in requirements: PR4 “Financial information on national and foreign operation”; PR5 “Description of fixed assets”; PR11 “Description of foreign shareholders” and PR12 “Taxation.” These require-

ments include items (income by geographical area, PR4; amount and location of assets, PR5; rights to own shares carrying the right to vote, PR11; or tax implications for shareholders, PR12) which are required by the majority of the countries analysed to a similar degree. However, important differences exist in the level of requirement of many of the items we have considered and thus we can say that the degree of harmonization in the level to which such requirements are sought is globally low.

On the requirements to be included in offer documents:

- In general, there is a high level of harmonization with respect to the degree to which these requirements are sought (approximately 0.5 or above); notice particularly that the maximum degree of harmonization is reached in OR10: "Material changes," which provides information on the significant changes in the financial position or other aspects of the company, and also note the high level in OR2: "Risk factors;"
- The minimum degree of harmonization is observed for OR1: "Information included by reference to other already published reports or available upon request." In this respect significant differences can be observed between the countries subject to analysis. Thus for example, in some, such as Spain, the presentation of information by reference to other reports, already presented or otherwise, is not contemplated in the law; in others, such as Luxembourg and the United States, this type of information is permitted only in specific cases; whilst in countries such as Japan the possibility of including information by reference to other documents is more broadly provided for. This diversity of level of requirement varies from country to country and thus we can note a low degree of harmonization.

Finally we have once again employed the Van der Tas $C\text{-}_{\text{Index}}$ to measure the level of global harmonization which exists between the 13 countries in question with respect to the degree of reporting requirements of the firms which participate in their stock markets. In each case we consider the degree of reporting requirement of each country to be the weighted average of the degree of requirement for the totallity of the reporting requirements.

Thus, calculating the value of the $C\text{-}_{\text{Index}}$, we have obtained the following:

- That the degree of harmonization in the level of reporting requirement exercised by the different countries with respect to periodical information is some 40 percent; and
- That so far as additional information in offering documents is concerned, the level of harmonization is significantly higher, reaching some 72 percent.

As can be seen, this result is consistent with those obtained under the Friedman and Wilcoxon analyses, which also show a higher level of harmonization with respect to the information that each country requires to be included in share offer documents, compared to the information that is to be supplied periodically to the stock markets.

CONCLUSIONS

In our view, stock markets can play an important role in the harmonization of economic-financial information, by way of the information that companies must present in order to be quoted on those markets.

On the basis of the analysis done with respect to the level (by law, by custom, etc.) of reporting requirement which is demanded by the different countries included in this study, we can draw the following conclusions:

> We have detected differences which are more important in the level of periodical reporting requirements than they are in the additional information to be included in the case of share offers. This fact has been confirmed by way of the different analyses we have employed.

In function of the level of requirement attributed to each country, we have obtained an ordering which we present in Table 5, with the most demanding countries being the United States, Canada and Japan, and the least demanding being Switzerland, Belgium and Australia. The highest level of reporting requirement is related to the aim of protecting the investor against possible fraudulent activities.

The differences we have observed among countries have their origin in aspects such as:

- Different regulatory models;
- The variety of sources of standards;
- Differences in information systems;
- Differences in accounting standards and practice; and
- The variety of information aims (the protection of creditors, investors, employees, tax authorities, etc.)[4]

In summary, differences exist in the information that is required by the different stock markets. In our view, the harmonization of reporting requirements would represent an impulse towards the harmonization of the financial information that is issued by companies, in that it would suppose an improvement in the comparative qualities of the same.

The increase in the level of reporting requirements on the part of the stock markets contributes towards the protection of user-investor interests, by facilitating the taking of investment decisions on the basis of more rigorous information about the company. On the other hand, the heterogenity observed in our study makes capital flows difficult at international level, due to the problems that a foreign company may encounter at the time of adapting its financial information to the requirements of the different countries.

In this sense, we consider the work to be performed by IOSCO as fundamental, given its international character, in the area of the harmonization of the regulation of stock markets, as this harmonization relates to their reporting requirements.

Future researchs might include the analysis of reporting requirements which are demanded by the national stock markets from the foreign companies which wish to be quoted on them.

APPENDIX 1

Average Degree of Requirement of the Periodical Reporting Requirements

PR	*AUS*	*BEL*	*CAN*	*FRA*	*GER*	*ITA*	*JAP*	*LUX*	*HOL*	*SPA*	*SWZ*	*U.K*	*USA*
1.	1.97	2.49	3.70	2.99	2.92	2.63	3.36	2.27	2.86	3.03	1.53	2.74	4.00
2.	2.96	2.29	4.00	3.07	2.96	2.29	3.57	2.29	2.29	2.96	0.68	3.50	2.96
3.	1.73	3.35	2.59	3.18	3.76	3.76	4.00	3.07	4.00	3.88	1.95	3.39	3.13
4.	3.22	1.73	4.00	2.51	1.93	1.73	3.26	2.30	1.93	2.67	0.63	3.42	4.00
5.	1.00	3.00	4.00	3.00	3.00	2.00	4.00	3.00	2.00	3.00	1.00	3.00	4.00
6.	4.00	3.00	3.00	3.00	3.00	4.00	4.00	3.00	3.00	4.00	0.00	4.00	4.00
7.	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
8.	2.60	2.75	2.88	3.53	3.24	2.64	3.79	2.92	3.20	3.47	1.88	3.11	2.81
9.	2.98	2.98	2.98	3.83	3.78	3.78	3.78	3.04	3.78	3.21	0.94	3.83	1.56
10.	0.00	0.00	4.00	1.00	0.00	0.00	4.00	0.00	0.00	2.00	0.00	0.00	4.00
11.	1.00	3.00	0.00	3.00	2.00	2.00	4.00	2.00	2.00	2.00	0.00	2.00	4.00
12.	0.00	2.07	0.69	1.69	1.38	2.00	4.00	2.07	1.38	2.00	1.38	1.38	4.00
13.	3.38	3.09	3.52	3.48	3.60	3.09	2.63	2.93	3.09	3.03	0.68	3.41	3.52
14.	3.31	3.50	3.69	3.36	3.56	3.45	3.53	3.27	3.68	3.69	2.58	3.63	3.87
15.	3.34	3.21	4.00	3.80	3.07	3.45	2.73	3.07	3.34	3.63	2.20	3.90	4.00
16.	4.00	2.49	4.00	4.00	2.49	4.00	4.00	2.49	2.49	4.00	0.00	2.87	4.00
17.	2.85	1.13	2.57	2.20	1.97	1.80	3.19	1.42	2.06	1.59	1.67	2.38	3.88
18.	3.62	2.58	3.62	3.62	3.62	3.62	3.62	2.58	3.36	3.62	0.00	3.87	3.95
19.	4.00	2.41	4.00	3.71	3.41	3.41	4.00	3.41	4.00	4.00	1.53	4.00	4.00
20.	4.00	3.56	4.00	4.00	3.12	3.12	4.00	3.12	3.56	3.12	0.00	4.00	4.00
21.	0.00	0.00	0.00	0.00	0.00	4.00	4.00	0.00	0.00	4.00	0.00	2.00	4.00

APPENDIX 2

Average Degree of Requirement of the Additional Reporting Requirements for Share Offering Documents

PR	*AUS*	*BEL*	*CAN*	*FRA*	*GER*	*ITA*	*JAP*	*LUX*	*HOL*	*SPA*	*SWZ*	*U.K*	*USA*
1.	1.75	0.00	3.50	3.50	0.00	0.00	4.00	3.50	3.50	1.75	0.00	0.00	4.00
2.	1.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
3.	0.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	0.00	0.00	4.00
4.	1.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	1.00	4.00	4.00
5.	1.55	4.00	4.00	4.00	4.00	4.00	4.00	4.00	2.07	4.00	0.00	1.93	4.00
6.	0.00	0.00	4.00	2.59	0.00	0.00	0.00	0.00	0.00	1.41	0.00	0.35	4.00
7.	0.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	0.00	4.00	4.00
8.	0.00	3.48	2.89	2.37	3.48	3.83	3.93	3.48	3.48	3.65	0.68	3.62	2.61
9.	4.00	0.00	4.00	0.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	4.00	4.00
10.	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
11.	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00

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NOTES

1. See, for instance, Smith (1991); Dunning and Pearce (1991); Freund (1988), and Gray, Meek and Roberts (1994).
2. For more details on this point, see Siegel and Castellan (1988).
3. See Van der Tas (1992).
4. See, Nobes and Parker (1991); Meek and Saudagaran (1990); Mueller et alt. (1991), Choi (1991), AlNajjar (1992) and Laínez (1993).

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An Outcome-Based Assessment of International Transfer Pricing Policy

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Key Words: International transfer pricing, U.S.-based multinationals, transfer pricing objectives

Abstract: *Instead of concentrating on the selection of the optimal transfer pricing method, this paper focuses on the consequences of international transfer pricing for multinational entities. A sample of U.S.-based multinational firms is employed to determine if transfer pricing results in measurable financial outcomes. Results of the study indicate that firms employ international transfer pricing to meet a variety of objectives. The dollar value of international transfers and the foreign sales percentage are both significant explanatory variables for the financial outcomes of these objectives.*

Transfer pricing research predominantly centers on the selection of an appropriate transfer pricing method. This narrow focus, while important and necessary, does not consider the entire process of transfer pricing. Various studies identify relevant variables affecting the transfer pricing choice and suggest hypotheses regarding the major relationships among the variables. Yet, there is virtually no empirical research which synthesizes these elements and examines the outcomes of international transfer pricing decisions beyond a consideration of the choice of the transfer pricing method. For example, how does the choice of transfer pricing policies impact the financial situation of the firm as measured by the total tax burden and return on assets? Similarly, the outcomes of the transfer pricing policies of multinational firms are still largely unexplored. These firms face multiple, often conflicting, objectives in determining an international transfer pricing policy.

An important research question is to focus on the consequences of international transfer pricing policies, rather than the method employed. In doing this, it is first necessary to examine the various environmental and internal factors which determine international

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transfer pricing objectives for multinational entities (MNEs). Numerous studies (see Table 1) describe the conditions (internally or environmentally) that compel a MNE to choose a particular transfer pricing method for international transfers. Borkowski (1990; 1992a) provides the most illuminating conclusion for this stream of research.

> Each decision is determined by the unique combination of environmental, international, and organizational characteristics of an MNC. Contingency theory posits that each MNC will choose the optimal transfer price for a given situation, whether domestic or international, based on this singular combination of characteristics. Consequently, no one "correct" transfer price can be prescribed for all MNCs (Borkowski, 1992a, p. 35).

Therefore, investigating the transfer pricing method will not provide information as to the efficacy of the method in achieving the transfer pricing objective. Examining various environmental, international and organizational characteristics with the goal of prediciting a particular choice of method is of questionable value. There is no indication as to which is the "correct" method, and the outcome of the choice of method is more informative.

Similarly, the taxation avoidance issue has gained such prominence that many firms find they are constrained in the actual choice of a method. Not surprisingly, foreign-controlled domestic corporations incur lower tax liabilities and report lower profits than their U.S.-controlled counterparts (Crain & Stitts, 1994; Kim & Lyn, 1990). Although transfer pricing manipulation is not the only explanation for lower tax liabilities, it does present a compelling rationale. More importantly, the potential to manipulate a lower tax liability suggests that the outcome of transfer pricing policy may indeed be more interesting than the mechanism.

Since transfer pricing manipulation and inequities occur regardless of the method employed, it appears that investigation of the method yields little additional information. The core issue behind any type of accounting choice is what the MNE is striving to accomplish through transfer pricing. Therefore, the objective of this study is to determine if international transfer pricing by multinational firms results in measureable financial outcomes. This research builds upon Borkowski's (1992a) comparison of international and domestic transfer pricing practices and the conclusion that the contingency theory approach applies to transfer pricing.

The key to understanding the role of the transfer pricing method is examining how the method fits into the entire decision making process. Figure 1 proposes a conceptual framework that includes the variables and relationships in the transfer pricing process. Various environmental and internal factors determine the transfer pricing objectives for the MNE. These objectives help to formulate the transfer pricing policy. MNEs are in a position through global exposure to take advantage of "market imperfections that arise from differentials in exchange processes" (Leitch & Barrett, 1992, p. 49). The transfer pricing policy consists of the transfer pricing method and various means by which the transactions may occur. This includes the dollar value, frequency and extent of transfers, the countries through which the goods are routed, the stage of completion of the good at transfer and the use of different methods for international versus domestic transfers.

The transfer pricing policy affects the performance of the MNE which can be evaluated along two primary dimensions: (1) financial performance effects; and (2) internal effects. Our study examines MNE performance in terms of financial performance effects. Internal effects would be represented by behavioral factors influencing the management of MNEs.

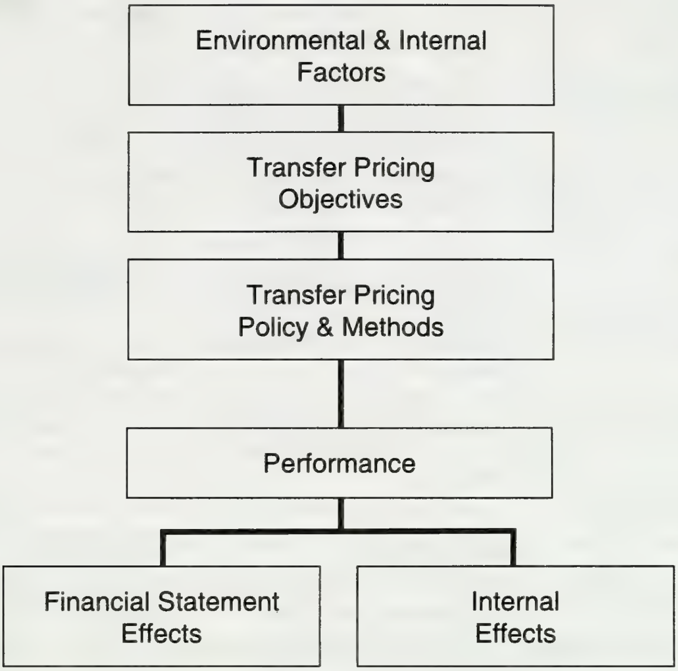

Figure 1. Conceptual Framework

This would include performance resulting from incentives or compensation, job satisfaction, goal congruence, or motivation of divisional managers.

Table 1 classifies selected literature in the area of transfer pricing according to: (1) empirical studies focusing on the determinants of a particular transfer pricing method or transfer pricing behavior; (2) empirical studies considering the issues beyond the transfer pricing method and including organizational performance; and (3) comprehensive studies. Only key studies that define the existing research foundations are identified in this analysis. Numerous analytical works are not included in this table, nor are the many purely descriptive studies and literature reviews. Grabski (1985) provides a comprehensive summary of virtually all transfer pricing literature up to 1983 relating to domestic activities. Reese et al. (1989) review the literature relating to agribusiness firms in the international marketplace. The most relevant literature review for this study is Leitch and Barrett (1992) who place the concept of transfer pricing within the multinational context, including objectives.

An examination of Table 1 highlights the paucity of empirical research regarding issues beyond transfer pricing methods. There is little evidence of an investigation of the outcomes of transfer pricing policies except for Hill et al. (1990) and Jacob (1995). The closest parallel to this study is Jacob's (1995) linking the volume of inter-geographic area transactions to the level of global taxes and profits to infer that transfer pricing is used to shift income and lower the tax burden. Similarly, Hill et al. (1990) consider transfer pricing policy as a function of corporate strategy which does result in measurable financial performance. Our study seeks to add to the very limited amount of literature which consid-

Table 1. Classification of Relevant Literature

Study	*Description*	*Scope*
Empirical Studies Focusing on the Determinants of the Transfer Pricing Method		
Al-Eryani, Alam, and Akhter (1990)	Environmental variables affecting transfer pricing method	International transfer pricing practices of U.S.-based multinationals
Benvignati (1985)	Comparison of transfer pricing methods and company characteristics	International transfer pricing by U.S.-based manufacturing multinational firms
Borkowski (1990)	Organizational and environmental variables affecting transfer pricing method	Domestic transfer pricing practices of U.S. manufacturing firms
Borkowski (1992a)	Differences between domestic and international transfers	Domestic and international transfer pricing practices of U.S. manufacturing firms
Borokowski (1992b)	Organizational and international variables affecting transfer pricing method	International transfer pricing practices for U.S.-based multinationals
Hoshower and Mandel (1986)	Transfer pricing method related to the level in the firm at which the decision is made	Domestic and international transfer pricing practices of diversified U.S.-based multinationals
Lin, Lefebvre and Kantor (1993)	Economic determinants of international transfer pricing policy	Multinational firms with a concentration in Asian-Pacific countries
Tang and Chan (1979); Tang (1992)	Environmental variables affecting transfer pricing	International transfer pricing practices of U.S.-and Japanese-based firms
Wu and Sharp (1979)	Determinants of transfer pricing practices	Domestic and international transfer pricing practices of domestic firms
Yunker (1983)	International and organizational determinants of transfer pricing methods	Domestic and international transfer pricing practices of multinationals
Empirical and Theoretical Studies Expanding Beyond Transfer Pricing Methods		
Theoretical		
Abdallah (1989)	Factors important in determining a transfer pricing policy, including objectives of the strategy	Multinational firms
Eccles (1985)	Develops a theory for transfer pricing as a strategy	Domestic transfer pricing policies of U.S.-based firms
Ghosh and Crain (1993)	Development of a decision model to evaluate profit effects of alternative transfer prices	An aid to U.S.-based multinationals for international transfer pricing
Plasschaert (1979)	Factors important in determining a transfer pricing policy	Multinational firms
Spicer (1988)	How strategic, organizational and transactional factors drive the transfer pricing policy of firms	Large, decentralized firms
Swieringa and Waterhouse (1982)	How organizational setting influences the transfer pricing decision context	Decentralized firms

Table 1. Continued

Empirical		
Hill, Hitt, and Hoskisson (1990)	Transfer pricing policy as a function of corporate strategy, influencing financial performance	Domestic transfer pricing practices of U.S. firms
Jacob (1995)	Evidence of transfer pricing for tax management purposes using the volume of transfers	U.S.-based MNEs, random sample of public firms
Comprehensive Studies Considering Several Dimensions of Transfer Pricing:		
Arpan (1972)	Objectives of transfer pricing, including method	International transfer pricing practices of 60 non-U.S.-based multinationals
Business International and Ernst and Young (1991)	Handbook for clients regarding transfer pricing and objectives, including results of survey of objectives	International transfer pricing practices and survey of 96 client firms, some were non-U.S.

ers the outcome of transfer pricing policies. The next section describes how firms may wish to employ a transfer pricing policy to achieve a particular outcome.

DETERMINANTS OF INTERNATIONAL TRANSFER PRICING OBJECTIVES

An organization's decisions about transfer pricing may be influenced by several considerations: (1) taxation; (2) management control; (3) operations; and (4) international factors (Abdallah, 1989). Different firms emphasizing the same objective may each desire different directions as to the effect of the transfer price. Depending on situational factors, firms may choose a high or low transfer price to create the target flow of cost or revenue. Since it is generally not possible for researchers to observe the actual transfer price, understanding more about the objectives of the transfer pricing method alleviates the need to consider the specific direction of the effect of the transfer price. We examine the four basic areas of influence, followed by a discussion of transfer pricing objectives and financial outcomes.

Taxation

Section 482 of the *U.S. Internal Revenue Code* (IRC) does not specifically mention transfer pricing yet gives the Internal Revenue Service (IRS) the power to "distribute, apportion, or allocate gross income, deductions, credits, or allowances . . . in order to prevent evasion of taxes or clearly to reflect the income" (IRC Section 482). "The purpose of section 482 is to place a controlled taxpayer on a tax parity with an uncontrolled taxpayer" (Treas. Reg. Section 1.482-1(b)(1)). The underlying premise of the law is to capture the true economic reality of a situation which would exist in the absence of related parties.

Congress and the IRS have both launched significant investigations into the transfer pricing problem from the tax avoidance perspective. House Ways and Means Oversight Subcommittee Chairman J.J. Pickle, D-Tex., noted that one firm under investigation "sold over $3.5 billion in goods in the U.S., had gross profits of almost $600 million, and paid

only $500 in federal income tax" (*Tax Notes International,* August 1, 1990). Grubert et al. (1993) document that foreign-controlled subsidiaries in the U.S. "report strikingly less taxable income than do their domestically controlled counterparts" (p. 269). Crain and Stitts (1994) and Kim and Lyn (1990) also provide supporting evidence that foreign-controlled firms report lower profits.

Clearly a significant problem exists even given U.S. tax regulations prohibiting manipulation. Transfer pricing manipulations are not exclusive to foreign-controlled firms in the U.S. Most developed nations have laws in effect similar to Section 482 to prevent the manipulation of transfer prices solely to avoid taxation. Also, from an international perspective, taxation issues may include tariffs levied by customs authorities on the entry or exit of goods into a country. Firms may employ transfer pricing to alter the value of the goods transferred. Transfers to affiliates in countries with high import duties may be accomplished with a lower transfer price to avoid inflating the value of the goods being imported. Often merely the physical transfer of goods between countries will allow firms to take advantage of tariff reductions.

Management Control

Transfer pricing decisions may also be employed to achieve objectives relating to the control of management through performance evaluation and rewards. The firm's transfer pricing policy may encourage divisional managers to act in a specific manner with respect to the transfer of goods or services. Ideally, the transfer pricing policy will achieve goal congruence (Abdallah, 1989; Plasschaert, 1979). Goal congruence refers to a situation where the goals of the divisional manager will coincide with those of the firm as a whole. The transfer pricing policy should not be structured so as to compel a manager to transfer goods resulting in a favorable reward for the manager while negatively impacting the global profits of the entire firm.

The transfer pricing policy should also be formulated so as to allow realistic performance evaluation for divisional managers. The policy should motivate managers to perform, as well as allow them to be evaluated on measures over which they have control. Managers should not be evaluated on attaining a performance measure which includes an unrealistic transfer price. Instead, if a manager chooses to purchase a good from a related entity, the transfer price generally reflects the cost that the firm saved in advertising or other external promotion. In this manner, the firm rewards the divisional manager for buying the good internally.

The actions of divisional managers may be influenced through transfer pricing policy. If a manager does not have the option of purchasing intermediate goods or services from outside the firm, his or her actions will reflect that knowledge. Managers may thus be forced to assist other departments with cost saving measures so as to reduce the transfer price of the good. To increase his or her own division's profits, the manager may even find it necessary to reduce direct costs if the transfer price is stable.

Operations

This dimension of transfer pricing considers how transfer pricing is employed to contribute to the efficient operation of the firm. Abdallah (1989) suggests that the

management of cash flows may be accomplished through an effective transfer pricing policy. This is most apparent for international transfers relating to currency withdrawal restrictions of various countries.

Off balance sheet financing may be facilitated by international transfer pricing. Members within an affiliated group may loan funds to other members at a market, or even lower rate of return. Lin et al. (1993) suggest this strategy as an alternative means to manipulate artificially the debt/equity ratio in order to avoid loan covenant violations. Transfer pricing may be employed in conjunction with additional accounting techniques as suggested by Watts and Zimmerman (1986) in the context of positive accounting theory.

Operating objectives may also include how the transfer pricing policy assists in the efficient allocation of goods and services among related entities. This objective is generally the focus of traditional analytic models involving the determination of a specific transfer price. A transfer price may be set to encourage conservation of scarce goods, utilization of surplus goods, additional processing for intermediate goods, or development of by-products for final sale. Through a transfer pricing policy, management can dictate whether managers have the option to purchase goods outside of the firm which are also produced internally.

International Considerations

While the international dimension implicitly includes most of the objectives previously discussed, there are three additional considerations which may be evaluated separately: (1) political concerns; (2) global competition; and (3) exchange rate risk and inflation. As noted by Scholes and Wolfson (1992), Japanese firms prefer to shift profits to Japan, even though the Japanese tax rate is higher, due to political reasons. This objective will depend upon the host country of the multinational firm as well as the nations where the firm competes. Shifting production (or profits) to a particular country may be desirable to achieve the cooperation of local government authorities, the work force, or local suppliers. Similarly, a MNE may employ transfer pricing to defer attention from regulatory authorities (Lin et al., 1993). Transfer pricing adjustments can be used to reduce income or actually increase taxes or customs duties. This is a political cost as proposed by Watts and Zimmerman (1986) which the MNE incurs to avoid increased scrutiny.

Transfer pricing may also be employed to allow the local subsidiary of an international firm to compete with domestic rivals. Benvignati (1987) has shown that multinational firms have a distinct profit advantage even in their own host country domestic market. A multinational parent firm may have the ability to transfer goods to a subsidiary at a lower price in order to facilitate a more competitive selling price. This may assist the subsidiary in establishing critical market share early in the penetration of the local market, or boost sales for an established market. This sort of tactic has led many countries to adopt "anti-dumping" legislation to prevent abuses and to protect local firms.

Yeoh and Cavusgil (1990) indicate how transfer pricing policy may be effective in the global sourcing strategy of multinational firms. This global sourcing is used as a competitive weapon. It involves transfers of goods and services internationally "in response to countertrade requirements, foreign currency swings, or to simply increase the firm's strategic leverage" with a goal of increasing transactional efficiency with foreign suppliers (Yeoh and Cavusgil, 1990, p. 350).

The transfer pricing policy of the firm may assist in the management of foreign exchange rate risk and inflation. Certain countries experience continual, dramatic fluctuations in the inflation rate. Exchange rate shifts may be rapid or gradual and may affect the currency of the parent firm, or only the currencies of some of the subsidiaries. Generally, the inflation rate is increasing, making it difficult for the parent firm to evaluate the transfer of resources and performance of managers of subsidiaries in these countries. Through a transfer pricing policy that recognizes the unequal effects of inflation and exchange rates, the parent entity is still able to transfer goods and services among subsidiaries in several countries. The transfer price may even be used as a hedge against rapid changes in inflation or exchange rates. Similarly, a transfer price adjustment may remove or equate some of the disparities present when evaluating managers. Often comparisons of performance are made where there are measures denominated in different currencies subject to unequal fluctuations in exchange and inflation rates. Inflation and exchange rates are external events over which the firm has no control. The transfer pricing policy may help the firm to make decisions which remove (or mitigate) the effect of these external events.

Finally, all of these factors need to be considered in light of the investment strategy of the MNE. Lin et al. note that international transfers are a "management device which can exploit environmental differences between related countries" (1993, p. 54). The MNE may evaluate transfer pricing in conjunction with the form of investment in local operations. Since the MNE has the choice of joint venture or subsidiary ownership, the international transfer pricing policy will reflect this degree of influence.

Transfer Pricing Objectives and Financial Outcomes

Eccles (1985) postulates that strategy and administrative process are the two primary determinants of transfer pricing practices. By focusing more on micro-economic issues, Eccles defines strategy somewhat narrowly, leading others (Al-Eryani et al., 1990; Borkowski, 1990; Borkowski, 1992a; Hoshower & Mandel, 1986; Spicer, 1988; Tang, 1992) to expand this definition to include additional macro-economic factors. Even though these recent works are based on a stronger theoretical construct, they continue to concentrate on predicting (or validating) the method of transfer pricing chosen by the firm. It is more informative to extend the analysis to the consequences of the selection of a transfer pricing policy and how this translates to financial outcomes. Given the relatively small pool of available transfer pricing methods, different firms may employ the same transfer pricing method to accomplish dramatically different objectives. While there is limited empirical research considering the objectives of transfer pricing, previous studies also tend to focus primarily on qualitative factors in describing transfer pricing. Adding quantitative factors to the analysis allows more precision in determining the consequences of transfer pricing policies. Financial outcomes expand the scope of analysis beyond classifying the policy of firms according to the transfer pricing method selected.

Confusion may also exist concerning the role of transfer pricing objectives. Abdallah (1989), Al-Eryani et al. (1990), and Borkowski (1990) discuss multiple objectives for the transfer pricing policy of a firm. Abdallah asserts that firms may split objectives into two major dimensions: (1) managerial motivation or performance evaluation; and (2) international operations. He suggests that firms may attempt to achieve "all, most, or a few of

these objectives" (1989, p. 30). Taking an opposite position, Grabski states that "the transfer pricing mechanism cannot be used effectively for more than one objective" (1985, p. 61). Spicer (1988) notes that strategic, organizational, and transactional factors explain the transfer pricing choice among firms. Al-Eryani et al. (1990) expected several objectives to influence the choice of transfer pricing method. Interestingly, they found that only legal factors and firm size were significant in predicting the method employed.

The lack of significance and consistency in prior studies may be due to the focus on the transfer pricing method, rather than considering the outcome of the transfer pricing policy. Similarly, objectives are often employed as explanatory variables in empirical models which attempt to describe the appropriate transfer pricing method. When used in this manner, the objectives are considered as environmental variables. Tang (1992) refers to objectives and various situational factors as environmental variables. There are no means to assess whether the variable has any relevance to the firm or the dependent variable. The objective of transfer pricing relates to an outcome rather than the means by which the objective is achieved, the transfer pricing method.

RESEARCH DESIGN

The research question in this study is to determine if international transfer pricing affects the outcomes of transfer pricing objectives. More specifically, is there a financial consequence which can be explained by the action of transfer pricing policy and not merely by the transfer pricing method? To explore the research question, it is first necessary to collect a sample from which international transfer pricing policies can be determined.

Sample Selection

Globally, only 500 multinational firms in the early 1980s accounted for almost 80 percent of international production (Stopford & Dunning, 1983). In the 1990s, the top 100 MNEs hold approximately 40–50% of all cross-border assets (*The Economist,* March 27, 1993). Clearly firms that compete in international markets have the capability to influence world markets regardless of the home country location of the parent company. A multinational firm is defined as one in which operations are conducted in two or more countries (Brooke & Remmers, 1978). MNEs operate in a unique environment which allows them to take advantage of a wider range of situations than purely domestic firms (Benvignati, 1987; Leitch & Barrett, 1992). Indeed then, MNEs may also be subject to more risk, yet are able to choose from a wider range of options. These firms may have a critical impact on the balance of trade and on import/export levels on a worldwide basis. Therefore, the sample used in this study consists of publicly-traded, U.S.-based multinational firms. This sampling frame was also selected to provide access to financial data and to mitigate respondents' concerns with confidentiality of information.

To maximize the likelihood that data would be available regarding transfer pricing activities, a core group of 179 U.S.-based multinational firms was identified from the *Directory of Multinationals* (Stafford & Purkis, 1989). This directory lists the 500 largest multinational firms in the world. The 179 firms represent all of the U.S.-based firms in the directory. To increase the sample, 363 firms were selected from over 10,000 firms

included in *Standard and Poor's* Disclosure. These choices were the result of a word search of the footnotes to financial statements which reported geographic information required under SFAS No. 14.[1] Firms initially identified by the word search were then reviewed to comprise the final group of 363 firms. Any non-U.S.-based firm or banking/ financial institution (SIC 6000 series) was eliminated from the sample. The firms in the additional group were selected based only on the presence of international operations. The existence of international transfer pricing could not be verified solely based on the footnote information. The resulting total sample consists of 542 (179 + 363) firms.

Data Collection

A mail questionnaire was administered to collect data relating to the transfer pricing policies of the sample firms. The questionnaire was directed to the top corporate financial executives in each company. Although these individuals may express opinions which differ from company practices, their responses are still valid as they are key informants. These individuals are those in the company most aware of the transfer pricing policies of the MNE. Dess and Robinson (1984) and Huber and Power (1985) both validate the use of key informants in the context of strategic management. In describing an organizations's strategic orientation, Shortell and Zajac (1990) provide evidence that the CEO's individual evaluation is accurate. In addition, any bias in the responses to this survey should not overwhelm the analysis. Most of the data employed in the models are quantitative and were collected from public financial information.

Table 2 describes the dilution of the sample from the original 542 firms to the remaining 82. The overall response rate was 21.19% with a usable response rate of 15.8%. This is comparable to the overall response rate of 21% reported by Al-Eryani et al. (1990) and exceeds the usable response rate of 10.2% by Crain and Stitts (1994). Tang (1992)

Table 2. Reconciliation of Sample Size

Initial Sample Mailout	542
Non-deliverable Questionnaires	–23
Delivered Questionnaires	519
Responses:	
Usable	82
Unusable	28
Total Responses	110
Classification of Unusable Responses:	
Respondent indicated questionnaire was not applicable to the firm	16
Excess of questionnaires received by sample firm precludes response	10
Response to questionnaire world be inconsistent with corporate disclosure policies	2
Total	28
Total Response Rate (based on delivered questionnaires)	21.19%
Usable Response Rate (based on delivered questionnaires)	15.8%

achieved a response rate of 28.6%. A study of multinationals by Kirsch and Johnson (1991) yielded a usable response rate of 13.2%. Borkowski's (1992a) study showed an overall response rate of 50%, yet the usable response rate was actually 31%. However, in her sample, only 9% of the respondents employed international transfer pricing.

Much of the non-response may indeed be attributed to the lack of a specific filter for the use of international transfer pricing. An analysis of 321 of the non-respondent firms for which financial data were available indicated that only 44% of these firms reported international transfers in their financial statement footnotes. It is likely that many non-respondents simply did not employ international transfer pricing to a significant extent. Firms in this set may also have elected not to respond to the survey for other reasons. Many large companies in the U.S. receive a significant volume of surveys and have instituted corporate policies prohibiting response. Clearly the potential for non-response bias exists. Transfer pricing is a sensitive subject, and non-respondents may have been hesitant to divulge information which might place them in a negative light.

Sample Characteristics

Table 3 describes the industry groupings for respondent firms. Not surprisingly, the majority of firms are manufacturers since these types of firms are more likely to engage in international transfer pricing. The year-end dates of the sample firms range from September 28, 1990 to July 31, 1991. The majority of firms have a calendar year-end.

The primary purpose of the questionnaire was to determine if sample firms engaged in international transfer pricing, and if so, which transfer pricing objectives were most important to the MNE. The first column of Table 4 describes the transfer pricing methods employed by respondent firms. The majority of the firms use cost- or market-based methods. These percentages are compared to the results of four fairly recent studies. The only major difference appears to be in the multiple transfer pricing methods category.

Fifty nine percent of the sample employs the same transfer pricing method or methods for domestic transfers as well as international transfers. This supports Borkowski's conclusion (1992a) that multinational firms seek the same objectives from domestic and international transfer pricing policies with the exception of international taxation concerns.

The frequency of the transfer pricing objectives chosen by sample firms is shown in Table 5. This table lists the primary objective and a ranking of the three top objectives. The second column indicates the percentage of respondents listing the objective as either first, second, or third in importance among all of the objectives. Nearly all of the respondent firms indicated multiple transfer pricing objectives. The results show that while a majority of firms do emphasize tax management when determining international transfer pricing practices, a substantial number of firms consider other objectives. Evaluation and performance issues and competitive market situations are also critical.

ANALYSIS AND RESULTS

Regression analysis is used to determine the extent to which qualitative and quantitative factors explain the financial outcomes of transfer pricing policies. The regression models

Table 3. Classification of Usable Respondent Sample by Industry

Number of Firms	*2-Digit SIC Code*	*Industry*
3	13	Petroleum Producing
1	15	Building-Construction
4	20	Food & Kindred Products
1	26	Paper & Allied Products
1	27	Printing & Publishing
9	28	Chemicals & Allied Products
3	29	Petroleum Refining
2	30	Rubber & Misc. Plastics
1	32	Stone, Clay & Glass Producing
6	34	Fabricated Metals
18	35	Computers & Commercial Machines
8	36	Electronics & Electrical Equipment
5	37	Transportation Equipment
9	38	Measurement Instruments
3	39	Miscellaneous Manufacturing
1	50	Durable Goods – Wholesale
1	51	Non-Durable Goods – Wholesale
1	58	Eating & Drinking Places
4	73	Business Services
1	87	Engineering Services
82		Total Firms

Table 4. International Transfer Pricing Methods Compared to Previous Studies

Method	*Present Study*	*Borkowski (1990)*	*Al-Eryani et al. (1990)*	*Tang (1992)*	*Borkowski (1992a)*
Cost	42%	45%	49%	41%	52%
Market	33%	33%	35%	46%	33%
Negotiated	18%	22%	15%	13%	15%
Multiple Methods	7%	0%	0%	0%	0%

Notes: Borkowski (1990) represents only domestic transfers.
Borkowski (1992a) represents only international transfers.

focus on the financial outcomes of *tax management* and achieving a *competitive position* as these were the dominant objectives indicated by survey respondents. In contrast, previous studies generally model the transfer pricing method employed by the firm as the dependent variable in multivariate analysis (Al-Eryani et al., 1990; Borkowski, 1990).

As discussed earlier, although the actual method is important, it is not a good indicator of the result of achieving the transfer pricing objective of the firm. Grabski states that "a final conclusion to be inferred from the empirical studies presented here is that not one best transfer pricing method exists" (1985, p. 60). Similarly, firms selecting the same method may actually have different motivations for using the same transfer pricing method. For these reasons, we concentrate on other environmental and internal factors and aspects of transfer pricing policy as explanatory variables in modeling. Measures of financial outcomes serve as dependent variables in both the tax management and competitive position models.

Table 5. Transfer Pricing Objectives of Sample Firms

Transfer Pricing Objective	*% Firms Listing as Primary*	*% Firms Listing as 1 of 3 Most Important*
Management of Overall Tax Burden	40	28
Maintain Competitive Market Position	21	17
Motivate Managers	9	10
Equitable Performance Evaluation	7	11
Compliance with Tax Law	7	7
Goal Congruence between Managers & the Firm	5	10
Reflect Actual Costs/Income in Consistent Manner	5	0
Manage Tariffs	4	9
Mitigate Cash Transfer Restrictions	1	4
None Specified	1	0
Manage Foreign Currency Exchange	0	2
Minimize Inflation Risk	0	1
Address Social or Political Concerns	0	1

The Tax Management Model

The tax management model employs the total tax burden of the MNE as the financial outcome of tax-related objectives of transfer pricing and was also used by Jacob (1995). Various environmental and internal factors suggested by prior research are operationalized as explanatory variables. Studies (Al-Eryani et al., 1990; Grubert & Mutti, 1991; Tang & Chan, 1979; Tang, 1992) have shown that legal or taxation-related environmental concerns are critical in determining the transfer pricing methods employed by firms operating in more than one country. Abdallah (1989) and Scholes and Wolfson (1992) also provide arguments for the critical role of taxation in the determination of firm-wide strategy for MNEs. Therefore, the tax burden of the firm should provide a measure of the consequences of the transfer pricing policy in meeting the objective of tax management.

The tax management model is represented as follows:

$$\boxed{\begin{aligned} TOTTX = {} & \beta_0 + \beta_1 TRANS + \beta_2 FSALEPER + \beta_3 METH1 + \beta_4 \\ & METH2 + \beta_5 METH3 + \beta_6 SUBCTY + \beta_7 SUBNO \\ & + \beta_8 DOMVIN + \beta_9 NI + \varepsilon \end{aligned}}$$

where:

TOTTX = Total tax burden.
TRANS = Dollar value of internal international corporate transfers.
FSALEPER = Non-U.S. net sales divided by total world-wide sales.
METH1-3 = Transfer pricing method (classification, 4 types).
SUBCTY = Number of countries for subsidiaries.
SUBNO = Number of subsidiaries.
DOMVIN = Same transfer pricing method for domestic versus international transfers (value of 0 for different method, 1 for same method).
NI = Net world-wide income.

Transfers

As perhaps the most likely explanatory variable, TRANS represents the dollar value of transfers between related entities of the multinational firm. This provides an indication of the magnitude of transfer pricing for the organization and a test of the extent to which the MNE may shift income. Transfer pricing (including the value of transfers) should affect the performance of the MNE. This variable does not measure the actual volume of goods transferred. Instead, the dollar value provides an indication of the extent to which a firm exercises transfer pricing policy. This variable was also employed in models by Benvignati (1985) and (1987), Hill et al. (1990), and Jacob (1995) and supported by Tang and Chan (1979).

Foreign Activities

Benvignati (1987) and Yunker (1983) suggest that the percentage of foreign activities as compared to total operations may be an important factor in the overall performance of the multinational firm. The variable FSALEPER represents the dollar value of foreign sales divided by total worldwide sales. This variable was selected rather than a percentage relating to income. With a sales percentage, there is less chance that various local country tax inequities, operating inefficiencies or advantages, or other externalities will confound the results. The sales percentage provides a better measure relating to the exercise of a transfer pricing policy. Jacob (1995) also employed this variable.

Transfer Pricing Method

The variables METH1-3 represent three dummy variables for the four categories of transfer pricing methods employed by the firm and were collected by questionnaire. This variable(s) has been used in virtually every empirical study of transfer pricing. Previous studies have attempted to refine the choice of method into numerous subcategories. However, in the final analysis, the methods were generally grouped into cost-based, market-based, or negotiated. Since some firms also employ multiple methods, this variable category is included, yet does not receive a separate variable. In the modeling procedure, the absence of METH1-3 indicates the presence of the fourth category of transfer pricing method. The major difference in this study from previous work is that the transfer pricing method is used as an explanatory variable rather than as a dependent variable.

Transfer Opportunities

The variables SUBCTY and SUBNO were employed by Benvignati (1985) and Yunker (1983) as indicators of the extent to which the firm can take advantage of opportunities to transfer goods to countries with different tax rates. It also provides some indication of the complexity of the related network available to the MNE with respect to the potential movement of goods, materials, or services. These two variables are also distinct in that a firm may have a large number of subsidiaries, yet operate in only a few countries. Therefore, both variables are used in the model. SUBCTY measures the number of countries where the MNE operates, and SUBNO represents the total number of subsidiaries. These

variables were collected from the annual reports of the firm as listed on *Standard and Poor's* Disclosure and NAARS (National Automated Accounting Research Service) and from the *Directory of Multinationals* (Stafford and Purkis, 1989).

Domestic/International Transfer Pricing Methods

The variable DOMVIN is a classification dummy variable to indicate whether a firm uses the same transfer pricing method for domestic and international transfers. A value of 1 denotes the same method, and a value of zero represents a different transfer pricing method in effect for the two types of transfers. Since the major apparent difference between domestic and international transfers is taxation, this variable may suggest an intent to employ transfer pricing for tax management.

Net Income

Finally, the variable NI is included in the model as a determinant of the tax burden of a MNE. While NI is expected to be related to the tax burden, the relative role of NI among the other predictors in the model is a relevant research question. This variable is also used as to lessen the need to scale the variables by some measure of firm size.

Results of the Analysis

Since several of the variables involve classification measures, the method of least squares was used to fit a general linear model. The results of the initial model are shown in panel A of Table 6. The model is highly significant ($p = 0.0001$) with the independent variables explaining approximately 90 percent of the variation in the total tax burden. This R^2 is not unexpected given the inclusion of the NI variable in the model. It clearly plays a dominant role in the relationship of the predictors to NI.

Although not all of the coefficients in the model were significant as anticipated, the coefficient for SUBCTY is significant ($p < 0.01$). Also, the TRANS variable is highly significant ($p = 0.0001$). These are both interesting findings. Since the number of countries of operations and the dollar value of transfers are easily extracted from financial statements, these measures can be used to explain the total tax burden of the MNE.

The high explanatory power of the model and the significance of the NI variable suggest that net income may be overwhelming the analysis. Therefore, a reduced model was computed which removed the NI variable. The results of this model are shown in Panel B of Table 6. The reduced model is significant as well. Both the TRANS and SUBCTY variables are significant. The reduced model explains 27 percent of the variation in the total tax burden.

To gain further insight into the relationships, the tax management model was analyzed using a different dependent variable and by adjusting the TRANS variable using sales to control for the size of the company. The dependent variable TOTTX was first divided by NI to create an approximate measure of the effective tax rate (ETR). This captures a different dimension than using the total absolute tax burden as the dependent variable. It provides a more specific indication of the tax management activities of the firm. The results in Panel C of Table 6 show that the model is significant with a higher R^2 than for

Table 6. GLM Results With TOTTX (or ETR) as Dependent Variable

Panel A:

$$TOTTX = \beta_0 + \beta_1 TRANS + \beta_2 FSALEPER + \beta_3 METH1 + \beta_4 METH2 + \beta_5 METH3 + \beta_6 SUBCTY + \beta_7 SUBNO + \beta_8 DOMVIN + \beta_9 NI + \varepsilon$$

Variable	*Parameter Estimate*	*F Value*	*Significance*	
TRANS	0.0403	17.07	0.0001	
FSALEPER	–31890.1536	0.26	NS	
METH1	–21730.0305	0.28	NS	R^2 = .8962
METH2	–17126.7651	0.16	NS	F = 47.00
METH3	–48333.6013	1.13	NS	p = 0.0001
SUBCTY	4253.0156	8.21	0.0061	DF = 58
SUBNO	–403.0291	2.33	NS	
DOMVIN	–29242.8851	1.67	NS	
NI	0.4538	294.79	0.0001	

Panel B:

Reduced Model

$$TOTTX = \beta_0 + \beta_1 TRANS + \beta_2 FSALEPER + \beta_3 METH1 + \beta_4 METH2 + \beta_5 METH3 + \beta_6 SUBCTY + \beta_7 SUBNO + \beta_8 DOMVIN + \varepsilon$$

Variable	*Parameter Estimate*	*F Value*	*Significance*	
TRANS	0.0660	6.82	0.0119	
FSALEPER	43823.3139	0.07	NS	
METH1	82213.6084	0.59	NS	R^2 = .2717
METH2	70239.1995	0.39	NS	F = 2.33
METH3	–63151.38223	0.28	NS	p = 0.0327
SUBCTY	9003.6255	5.54	0.0225	DF = 58
SUBNO	–605.0601	0.76	NS	
DOMVIN	–87775.1631	2.23	NS	

TRANS	Dollar value of internal transfers.
FSALEPER	Non-U.S. net sales divided by total world-wide sales.
METH1-3	Transfer pricing method.
SUBCTY	Number of countries for subsidiaries.
SUBNO	Number of subsidiaries.
DOMVIN	Same method for domestic and international transfers.
NI	Net world-wide income.
TOTTX	Total tax burden.

Note: Value of < 0.10 is noted by NS

the reduced model with TOTTX as the dependent variable. The TRANS variable is scaled by sales (TRANSS) and remains significant as is the SUBCTY variable. However, the coefficient is now negative as a higher level of transfers would reduce the effective tax rate. More importantly, the analysis indicates that the SUBNO and DOMVIN variables also achieve significance.

Regardless of the model specifications, the variable TRANS is highly significant. Although the TRANS variable does not indicate the absolute volume of the goods trans-

Table 6. Continued

Panel C:

$$ETR = \beta_0 + \beta_1 TRANSS + \beta_2 FSALEPER + \beta_3 METH1 + \beta_4 METH2 + \beta_5 METH3 + \beta_6 SUBCTY + \beta_7 SUBNO + \beta_8 DOMVIN + \varepsilon$$

Variable	*Parameter Estimate*	*F Value*	*Significance*	
TRANSS	–1.5945	3.67	0.0610	
FSALEPER	–0.8108	1.83	NS	
METH1	0.32201	0.67	NS	R^2 = .3737
METH2	0.4594	1.28	NS	F = 3.73
METH3	0.1341	0.09	NS	p = 0.0017
SUBCTY	–0.0279	3.97	0.0517	DF = 58
SUBNO	0.0081	12.61	0.0008	
DOMVIN	0.4672	4.63	0.0363	

TRANSS	Dollar value of internal transfers divided by total sales.
FSALEPER	Non-U.S. net sales divided by total world-wide sales.
METH1-3	Transfer pricing method.
SUBCTY	Number of countries for subsidiaries.
SUBNO	Number of subsidiaries.
DOMVIN	Same method for domestic and international transfers.
TOTTX	Total tax burden.
ETR	TOTTX divided by NI.

Note: Value of < 0.10 is noted by NS

ferred, the significance of this variable suggests that the total dollar value of the transfer of goods explains a portion of the total tax burden. A higher value of transfers indicates a larger total tax burden. This variable is most interesting in that it retains significance in all of the models, regardless of the choice of dependent variable. An interpretation of this effect is that the amount of transfers is a significant indicator of financial performance for firms which employ a transfer pricing policy. In this case, the dollar value of the transfers does explain a portion of the total tax burden.

This finding may seem rather obvious in that transfers assist the MNE in ultimately realizing sales to end-users. Naturally then, transfers capture the final sales of the firm which is reflected in taxable income. However, what is most interesting about the results is the fact that the dollar value of transfers helps to explain a portion of the tax burden with or without the inclusion of net income in the models. MNEs make the *choice* to implement internal transfers before final sale of the good, raw material, or service. This choice then affects financial outcomes as manifested by the final tax burden (and effective tax rate) of the firm.

The significance of both the TRANS and SUBCTY variables provides compelling support for transfer pricing policy affecting financial outcomes. While SUBCTY is not specifically a dimension of transfer pricing policy, it does describe the extent to which the MNE has the opportunity to exercise transfer pricing. These results also suggest why prior studies have failed to find significance for various internal and environmental factors and transfer pricing objectives. These factors do affect financial outcomes. However, the direc-

tion of the effect is more likely in an indirect manner. Variables which capture the transfer pricing policy such as the dollar value of transfers and the number of countries for subsidiaries are perhaps better predictors of financial outcomes than the transfer pricing method.

Multicollinearity does not appear to be a significant problem in the models. A correlation matrix is shown in Table 7. For the initial model, the significant variable TRANS is only significantly (p = 0.0002) correlated with SUBNO. SUBCTY is correlated (p = 0.0461) with NI, (p = 0.0004) with SUBNO, and (p = 0.0904) with FSALEPER. NI, however, is significantly correlated with: (1) DOMVIN (p = 0.0216); (2) METH1 (p = 0.0771); and (3) METH3 (p = 0.0893). In the reduced model, these intercorrelations with NI are not an area for concern, since the remaining variables still fail to achieve significance. Therefore, it seems that the lack of significance for the number of subsidiaries (SUBNO) in two of the models may be partially attributed to the intercorrelation with the TRANS and SUBCTY variables. In the model where SUBNO is significant, the dollar value of transfers is scaled by sales (TRANSS). SUBNO is not significantly correlated with TRANSS. The SUBCTY variable captures some of the effect of the FSALEPER variable. This is a logical conclusion since the more countries in which the firm operates, the more likely it is that foreign sales will constitute a higher percentage of overall sales. Granted, a firm may produce goods in numerous countries and still sell the majority of products in the domestic market. However, both variables capture the potential of the firm to manage taxation, employing transfers of goods and different tax rates by country.

Both SUBCTY (coefficient = 0 .3321, p = 0.0038) and TRANS (coefficient = 0.3197, p = 0 .0058) have a positive relationship to the TOTTX variable. Therefore, both the number of countries where the MNE operates subsidiaries and the dollar value of total transfers have an increasing effect on the total tax burden. Even though the effect is positive, these two components provide the opportunity for the MNE to manage the tax burden through transfer pricing. The positive significant effect of the SUBCTY variable indicates that the larger number of countries of operation affords the firm a greater variety of tax rates between which to transfer income and costs through the transfer of goods. Naturally, this will also increase the tax burden.

One interesting finding is that the transfer pricing method (METH1-3) is not significant in any of the models. This mirrors the results of earlier research which failed to find a comprehensive set of environmental or internal variables that could explain the transfer pricing method choice of the firm. This was the case with both domestic and international transfer pricing. The results of this study lend further support to Borkowski's (1992a) conclusion that contingency theory applies to the transfer pricing choice of the firm. It appears that there is additional evidence regarding the lack of importance of the method. It is the result of the action or rather the outcome of the transfer pricing policy which should be investigated.

The Competitive Position Model

The model which considers the financial outcome of the objective of achieving competitive position examines return on total assets (ROA). ROA was selected as this variable would capture the income of a firm attempting to achieve competitive advantage either through a cost leadership or product differentiation strategy (Porter, 1985, p. 11). The model is as follows:

$$ROA = \beta_0 + \beta_1 TRANSA + \beta_2 DIVERS + \beta_3 EXTERNAL + \beta_4 RDA + \beta_5 FSALEPER + \varepsilon$$

where:

ROA = Net world-wide income divided by total assets.

TRANSA = Dollar value of internal international transfers divided by total world-wide sales.

DIVERS = Degree of product diversification (classification variable).

EXTERNAL = Option available of purchasing goods from external sources (value of 1 when the option is available, otherwise value of 0).

RDA = Research and development expense divided by total assets.

FSALEPER = Non-U.S. net sales divided by total world-wide sales.

Transfer Opportunities

The TRANSA variable represents the opportunity of the firm to exercise a transfer pricing policy through the movement of goods. In this model, the TRANS variable becomes TRANSA so as to scale the variable considering that the dependent variable is a ratio which is adjusted for size effects. TRANSA is the dollar value of transfers divided by total world-wide assets.

The EXTERNAL variable is a dummy classification variable, collected by questionnaire, indicating if managers have the option (value of 1) of purchasing goods from outside sources when the goods are manufactured by a related entity. If these internal transfers are mandated, then the value of the variable is zero. Eccles (1985) and Cho (1990) suggest the importance of this variable with respect to transfer pricing policy.

Diversification

The DIVERS variable was collected by questionnaire response to a seven point scale. This measure indicates the product diversity of the firm. The degree of product diversification provides some detail of the organizational situation, as well as the complexity of the transfer pricing process. Hill and Hoskisson (1987) note the importance of related and unrelated diversification in creating synergistic and functional economies. These economies should affect ROA. The DIVERS variable does not differentiate between related and unrelated diversification. It merely captures the general diversification of the firm. Eccles (1985), Hill et al. (1990), and Spicer (1988) suggest the importance of the diversification measure.

Innovation

The RDA variable is research and development expense scaled by total world-wide assets to control for size. Hill et al. (1990) found this variable to be significant in explaining firm performance. It provides a measure of the competitiveness of the MNE as well as an aspect of transfer pricing policy. Often research and development costs are transferred

among subsidiaries to affect the performance of a particular entity. Benvignati (1987) also employed this variable.

Foreign Activities

The FSALEPER variable is the foreign sales of the multinational firm, divided by total world-wide sales. This is also a measure of the scope of international operations of the firm and the availability of transfer pricing management opportunities. This variable denotes the importance of foreign sales in explaining the performance of the firm.

Results of the Analysis

The results of the multiple regression analysis are shown in Table 8, and the correlation coefficients are detailed in panel B of Table 7. The model is significant with the variables explaining approximately 33 percent of the variation in ROA. The TRANSA and FSALEPER variables are the significant predictors.

Correlation coefficients indicate that the TRANSA variable is significantly positively correlated with both the EXTERNAL (p = 0.0313) and RDA (p = 0.0017) variables. This suggests that TRANSA may be capturing some of the effect of these variables, perhaps accounting for their insignificance in the model. FSALEPER is not significantly correlated with any of the other variables. The correlation of the EXTERNAL and DIVERS variables is not significant at the 0.05 level.

The results of the analysis suggest that the value of transfers and the foreign sales percentage have an effect on the financial outcomes of the firm as measured by return on assets. An increase in the foreign sales percentage has a positive effect on ROA. However, it is interesting to note that an increase in the amount of transfers scaled by assets actually reduces the return on assets. Since the effect on assets is controlled, the result of this influence is through net income. More dollar value of transfers has a negative effect on net income. This may reflect a concurrent transfer pricing objective of managing the tax burden.

Even though return on assets is a comprehensive measure of performance, the model reflects the importance of transfer pricing in explaining ROA. The value of transfers and foreign sales should relate to income, and thus affect ROA. However, both of these aspects together reflect the choice of the MNE with respect to anticipated corporate performance. The variable TRANSA captures the magnitude of transfer pricing much more effectively than a classification variable detailing the method of transfer pricing employed.

CONCLUSIONS AND LIMITATIONS

This research offers additional insight regarding the international transfer pricing objectives of U.S.-based multinational firms. It is apparent that MNEs attempt to achieve more than one transfer pricing objective through their transfer pricing decisions. The use of particular international transfer pricing methods for MNEs in this study reflect similar findings noted in previous studies. However, this study differs from previous research in the use of measures of financial outcomes as the result of transfer pricing.

Table 7. Correlation Coefficients and Significance Levels

A. For Tax Related Variables

	TRANS	*FSALEPER*	*METH1*	*METH2*	*METH3*	*SUBCTY*	*SUBNO*	*DOMVIN*	*NI*	*TOTTX*	*TRANSS*	*ETR*
TRANS	1.0000	–0.1343	–0.1502	0.1765	0.0108	0.0846	0.4609	0.0660	0.1508	0.3197	0.2384	0.0869
	0.0000	0.2572	0.2047	0.1352	0.9275	0.5028	0.0002	0.5844	0.2030	0.0058	0.0422	0.4680
FSALEPER		1.0000	–0.0241	0.0998	–0.2135	0.2039	–0.1162	0.1133	0.0253	–0.0417	0.2185	0.0653
		0.0000	0.8342	0.3846	0.0606	0.0904	0.3530	0.3298	0.8259	0.7171	0.0633	0.5726
METH1			1.0000	–0.5897	–0.3982	0.0474	–0.0403	0.0527	–0.1963	–0.2021	–0.0186	0.0110
			0.0000	0.0001	0.0002	0.6884	0.7403	0.6428	0.0771	0.0687	0.8756	0.9231
METH2				1.0000	–0.3315	–0.0660	0.0829	–0.1233	–0.0224	0.0141	0.1074	0.0501
				0.0000	0.0023	0.5762	0.4953	0.2757	0.8420	0.8999	0.3657	0.6590
METH3					1.0000	–0.0441	–0.0092	0.0518	0.1889	0.1850	–0.1952	0.0198
					0.0000	0.7089	0.9396	0.6482	0.0893	0.0962	0.0980	0.8615
SUBCTY						1.0000	0.4133	–0.0490	0.2326	0.3321	–0.0570	–0.0796
						0.0000	0.0004	0.6830	0.0461	0.0038	0.6518	0.5066
SUBNO							1.0000	0.0150	0.1059	0.1641	–0.0289	–0.0220
							0.0000	0.9034	0.3828	0.1748	0.8245	0.8584
DOMVIN								1.0000	–0.2563	–0.2711	0.1774	0.1135
								0.0000	0.0216	0.0150	0.1389	0.3223
NI									1.0000	0.8857	–0.1499	–0.0874
									0.0000	0.0001	0.2057	0.4408
TOTTX										1.0000	–0.1164	0.0276
										0.0000	0.3267	0.8081
TRANSS											1.0000	0.1042
											0.0000	0.3837
ETR												1.0000
												0.0000

Table 7. Continued

B. For Competitive Advantage Variables

TRANSA	*DIVERS*	*EXTERNAL*	*RDA*	*FSALEPER*	*FOA*
1.0000	0.1686	–0.2540	0.4200	0.1185	–0.4305
0.0000	0.1539	0.0313	0.0017	0.3180	0.0001
	1.0000	0.1877	0.1902	0.0407	–0.0896
	0.0000	0.0933	0.1565	0.7233	0.4234
		1.0000	–0.0022	0.1137	–0.0399
		0.0000	0.9871	0.3247	0.7237
			1.0000	0.0835	–0.1584
			0.0000	0.5447	0.2393
				1.0000	0.1342
				0.0000	0.2413
					1.0000
					0.0000

Models were constructed to ascertain if environmental and internal contingencies and aspects of transfer pricing were useful in explaining the financial outcomes of transfer pricing objectives. For the objectives of tax management and increasing competitive position, the dollar value of transfers was a consistently significant explanatory variable of financial outcomes. The results in Table 8, coupled with the earlier findings regarding the tax burden as the dependent variable, provide compelling support for the conceptual framework of this study. Both the tax burden and return on assets capture different measures of financial outcome relating to transfer pricing objectives. The significance of the foreign sales percentage (FSALEPER) in the ROA model (Table 8) rather than in the total tax models (Table 6) may indicate that foreign sales is a more appropriate variable relating to competitive position rather than managing the tax burden.

Future research might refine the FSALEPER variable in the tax management models to capture some measure of the foreign tax credit provision. Foreign sales would be much more relevant to the tax model in terms of this attribute. Similarly, the number of countries where the multinational firm operates or controls subsidiaries was also a significant explanatory variable. This finding suggests that exposure to a greater number of countries facilitates the exercise of transfer pricing to accomplish objectives. The lack of significance for the transfer pricing method also adds support for future research to explore alternative dimensions of transfer pricing.

Future research considering the outcomes associated with the internal effects of transfer pricing objectives would provide a significant contribution to the literature. It would be interesting to investigate how transfer pricing objectives such as motivating managers, providing equitable performance evaluation, and establishing goal congruence translate to measureable outcomes. The effect of transfer pricing on realizing these objectives could be determined by primary data collection procedures. This would create an additional set of empirical evidence beyond experimental simulations relating to the more behaviorally-related aspects of transfer pricing. The international dimension in this area affords a wide range of opportunity for initial research.

Clearly any research in the area of transfer pricing faces important challenges, including a lack of available data and use of surrogates and proxies. Aside from internal validity

Table 8. GLM Results with Performance Measure as Dependent Variable

$$ROA = \beta_0 + \beta_1 TRANSA + \beta_2 DIVERS + \beta_3 EXTERNAL + \beta_4 RDA + \beta_5 FSALEPER + \varepsilon$$

Variable	*Parameter Estimate*	*F Value*	*Significance*
TRANSA	–0.3426	15.03	0.0003
DIVERS	0.0039	0.48	NS
EXTERNAL	0.0208	0.88	NS
RDA	–0.0565	0.06	NS
FSALEPER	0.1021	4.28	0.0441

R^2 = .3254
F = 4.44
p = 0.0022
DF = 51

TRANSA	Dollar value of transfers divided by total assets.
DIVERS	Degree of product diversification.
EXTERNAL	Purchase goods from external sources.
RDA	Research and development divided by total assets.
FSALEPER	Non-U.S. net sales divided by total world-wide sales.
ROA	Net world-wide income divided by total assets.

Note: Value of < 0.10 is noted by NS

problems, there is also the overriding issue of trying to capture an unobservable phenomenon. There is little question that transfer pricing manipulation exists in the U.S. However, it is virtually impossible for academic researchers to monitor or to detect abuses of Section 482 since complete access to company records is necessary. Therefore, from a taxation perspective, research must rely on information extracted from financial statements or collected by questionnaire. It is difficult to confirm the validity of questionnaire responses given this environment.

A similar problem exists considering other objectives of transfer pricing rather than tax management. Firms exist in an increasingly competitive arena and may be reluctant to divulge any information relating to operations or strategy. Nevertheless, transfer pricing remains a sensitive subject regardless of the motivations for inquiry. The use of relative measures may help to overcome confidentiality issues. For example, an executive may be willing to indicate the relative competitive position of his/her organization as compared to key competitors. This type of research may help to identify a more comprehensive role for both domestic and international transfer pricing.

NOTES

1. For U.S. firms, this consists of MNEs which must disclose geographic segment data under Statement of Financial Accounting Standards (SFAS) No. 14, "Financial Reporting for Segments of a Business Enterprise." A publicly held, U.S. multinational firm must disclose geographic data if: "1) revenues generated from total foreign operations are 10% or more of consolidated revenues or (2) identifiable assets of total foreign operations are 10% or more of consolidated total assets" (Doupnik & Rolfe, 1990, p. 253).

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Recent Developments in the Accounting Profession in New Zealand: A Case of Deprofessionalization?

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Abstract: *The international accounting literature is replete with references to the importance of professionalization of accounting in its development. While professionalization of accounting is progressing at a rapid rate in many developing countries, the recent developments in some western industrialized countries seem to suggest a different trend. This paper proposes to investigate these developments and provide a critical analysis focusing on one western industrialized country (i.e., New Zealand).*

Evidence is provided in the paper to show that (a) the boundaries between accountancy and other occupations are becoming increasingly blurred; (b) the dominance of accounting controls in organizations is being challenged; (c) the profession does not control access to accounting knowledge; and (d) the profession is unable to prevent government intervention in the areas of work standards, and bureaucratic controls in the work place. The paper argues that the recent changes in the accounting profession in New Zealand suggest a trend towards deprofessionalization.

INTRODUCTION

The international accounting literature is replete with references to the importance of professionalization in the development of accounting, and the professionalization of accounting around the world (Hardman, 1984; Markell, 1985; Osiegbu, 1987; Chang, 1992). Enthoven (1983) goes as far as to argue that the development of an accounting profession is an important contribution that U.S. accounting could make to third world countries. Whilst professionalization of accounting in developing countries is progressing at a rapid rate, the accounting profession in so-called developed countries is also evolving. This paper describes recent developments in the accounting profession in New Zealand and attempts to analyze the direction of these changes.

A recent study by Flanigan, Tondkar, and Coffman (1994) highlights the different conceptual viewpoints about the concept of a profession. They point to three dominant

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approaches to studying the concept—structural functionalism, interactionism and critical theory—and argue that each approach explains different stages in the evolution of the accounting profession, concluding that the critical view best describes the current stage of development of the accounting profession in England, the United States and Australia. Critical theory has been widely used in the literature in analyzing the developments in the accounting profession (e.g., Armstrong, 1985; Kedslie,1990; Walker,1991). Taking a similar approach the paper argues that the recent developments in the accounting profession in New Zealand suggest a trend toward deprofessionalization of accounting.

The rest of the paper is organized into four sections. The next section reviews the literature on the sociology of professions to identify the features of the processes of professionalization and deprofessionalization. The third section traces the recent developments in New Zealand, focusing on the changes in the New Zealand Society of Accountants (NZSA) (the only professional accounting body in New Zealand), and the recent changes in the regulation of financial reporting. The fourth section analyses these changes and argues that they represent a deprofessionalization of accounting in New Zealand, with some concluding remarks in the final section.

Professionalization and Deprofessionalization

Daniel Bell (1968) asserted that the 'post industrial' society would be a professional society. Supporting this view, Freidson (1971) in an editorial foreword to a special issue of the *American Behavioral Scientist* also forecast a professionalized society and Foote (1953) argued that even blue-collar workers were becoming professionals. The deprofessionalization hypothesis was proposed by Haug (1973) as an alternative to the popular professionalization argument that dominates the litterature. Deprofessionalization is defined as "a loss to professional occupations of their unique qualities, particularly their monopoly over knowledge, public belief in their service ethos, and expectations of work autonomy and authority over the client" (Haug, 1973, p.197). These concepts are discussed and explained below.

The Concept of Accountancy as a Profession

The claim that accounting as a profession is similar in status to medicine and law is based on the argument that the unregulated market in the provision of accounting services, e.g., bankruptcy and audit services (Brown, 1905), is not in the public interest. This is followed up by the claim that the regulation of the provision of accounting services should be by an organization representing qualified practitioners (Carey, 1969). In the late 19th century, the accounting occupation was keen to be referred to as a profession. The medical and legal occupations had already been recognized as professions, giving them the right to regulate entry and the term had connotations of status and prestige.

The 'profession' as a concept for serious study, developed when sociologists found a number of occupations resisting the dominant trend in the workplace, referred to as bureaucratization. The traditional sociological studies mainly concentrated on the characteristics or attributes that differentiated a profession from other occupations and the relationship of professions to the rest of society (functionalist approach). Vollmer and

Mills (1966) refer to a profession "as an 'ideal type' (in the Weberian sense) or model of occupational structure characterised by certain specific elements" (p.480). Professionalization, then becomes a process of achieving this ideal type. The main features of this process as identified in the literature are: (1) the daily work of professionals is characterised by the application of specialized techniques based on a body of theory, to solve problems in a particular field; (2) identify with particular codes of ethics and claim to work in public interest; (3) enjoy community sanctions to determine standards of entry and work as well as an effective self-regulation process. This functionalist approach was adopted by Carey (1969) and Buckley and Buckley (1974) to illustrate the development of accounting as a profession.

The functionalist approach has been strongly criticized for its ahistoric nature (Johnson, 1972; McKinley, 1973). Saks (1983) states that this perspective was obscuring the social and historical conditions under which occupational groups became professions, including the power struggles involved in the process of professionalization. Sociologists working within this approach have also been criticized for taking professional ideologies on trust, and thus legitimizing professional privileges in advance of careful appraisals of the function and behaviour of professions in society (Elliot, 1972; Daniels, 1975).

In recent times, the interactionist and the critical/power approaches to understanding the concept of 'profession' have gained prominence. The interactionist approach following from Burcher and Stauss (1961), focuses on the interaction and competition among segments of a profession to maintain its identity and establish its domain. The interactionist, instead of assuming the distinctiveness and authority of the attributes of professionals, analyzes professional work as a process of constructing and maintaining an occupational role (Becker *et al.*, 1961). Freidson (1975) in his pathbreaking analysis of medicine argues "that the only truly important and uniform criterion for distinguishing professions from other occupations is the fact of autonomy—a position of legitimate control over work" (p.82). The interactionist while highlighting the political skills of aspiring professionals and segments within a profession in attaining power and status, omits considerations of the structural conditions of relative success or failure (Saks, 1983; Boreham, 1983).

The critical theorists utilizing neo-Weberian and Marxist views on social structure, characterize professions as groups which have been able to gain control of an occupation or the provision of a particular service (Johnson, 1972), or occupations which have been able to create market shelters for their members (Freidson, 1982). Professionalization on this view is perceived as a strategy developed by skilled workers for consolidating and increasing the social distance between themselves and their 'clients,' by invoking the argument that the client is unable to evaluate the services of the professional. For example, Johnson (1972) states that "Professionalism arises where the tensions inherent in the producer-consumer relationship are controlled by means of an institutional framework based upon occupational authority" (p.51).

Occupational control provides members of an occupation with authority over the definition, conduct, and evaluation of their work, and also the right to determine the conditions of entry into and exit from practice within occupational parameters (Child and Fulk, 1982). Freidson (1982) emphasizes the attainment of occupational autonomy as the key to occupational control or the creation of market shelters. Occupational autonomy in most Anglo-American countries is frequently attained through a process of political negotiation with the state (Freidson, 1975; Larson, 1977). This process of political negotiation

involves the translation of one order of scarce resources—special knowledge and skills—into another—social and economic rewards (Larson, 1977).

The process is usually facilitated by the ability of occupational members to gain control over the relevant labour market segment (Freidson, 1982) and establishment of clear boundaries with other occupational groups (Child & Fulk, 1982); domination of work sites (Abbott, 1991); possession of exclusive control over access to knowledge in a particular area (Freidson, 1986) and by securing legal prohibition of non-members from applying codified knowledge and techniques (Child & Fulk, 1982); ability to minimize government intervention in the areas of work standards and marketplace controls by the establishment of acceptable self-regulatory processes (Freidson, 1975, Child & Fulk, 1982); and the avoidance of bureaucratic controls in the work place (Child & Fulk, 1982; Larson, 1977; Scott, 1965).

In recent times the power approach has gained popularity in explaining the development of the accounting profession. Armstrong (1985), following from a Marxist perspective, identifies the use of the accounting profession's characteristic strategy for controlling labour in organizations as crucial to the ascendancy of the accounting profession. On this view, the rise of accounting controls seems to be crucial to the professionalization of accounting (Armstrong, 1987). Alternatively, Macdonald (1984) highlights common interest, the patronage of the upper class and the involvement of accountants in legal work, as crucial to professionalization. Kedslie (1990) also identifies common interest as critical to professionalization. Walker (1991) in his study of the defence of professional monopoly by the Scottish Chartered Accountants, puts forward yet another view which highlights the use of a 'functionalist' interpretation of the role of professions, and access to superior resources and linkages with the legal profession as critical in the defence.

The main contribution of these perspectives has been the examination of the dynamics of professionalization and the role of professions in societal dynamics. The primary role of professional associations is seen as the organization of people working in the same area to achieve occupational closure or market shelter. Hall (1983) in a survey of articles in the sociology of professions states:

> it should be mentioned that when manuscripts attempting to deal with variations on the traditional model are submitted to work and occupations, they routinely suffer negative reactions on the part of reviewers. In the minds of the experts in the field, the power approach to the professions is itself now in power (p.12)

The Deprofessionalization Hypothesis

The deprofessionalization hypothesis was proposed as a revolt to the popular idea that the 'post-industrial' society will be a professionalized society (Bell, 1968). Haug (1977) argues that a series of historical events and social changes are converging to dimnish professional control and render the concept obsolete, i.e.,

> (1) world wide increase in education levels; (2) new divisions of professional labour involving the increasing use of lesser trained personnel; (3) growing adherence to an ideology of public accountability, and occupational equality; (4) the aggregation of clients in bureaucratic settings with consequent recognition of their common condition; and (5) the computer revolution in data-handling technology (p.225).

In a study of the medical profession Haug (1973) found that rising levels of education is contributing to the demystification of the professional's knowledge base. In a separate study of physician-patient relationship it was found that there was an increasing tendency for younger patients with higher levels of education to question physician authority: "Whereas previously such disobedience was covert, in the form of noncompliance, it is now overt, in public demands for participation in decision making" (Haug & Lavin, 1981). The erosion of unwavering trust in the doctor is lamented by Shorter (1985) because the decline of the practitioner's authority has eliminated the placebo effect generated by patients' belief that they would be helped.

There is evidence to suggest that other professions are also undergoing similar changes. Commenting on pharmacy, Toren (1975) points out that "Pharmacists no longer compound mysterious mixtures which require esoteric knowledge and skills; most medications are ready made and have only to be taken of the shelf" (p.330). Rothman (1984) in a study of the legal profession argues that the routinization of expert knowledge, specialization, consumerism, organizational employment and encroachment from allied professions are eroding the legal profession's monopoly over all legal services and autonomy from external regulation.

Specialization of professional work and the division of labor within professions are found to be contributing to bureaucratic control of professional work, and the emergence of para-professionals claiming parts of professional work (Haug, 1973). It is also pointed out that the increasing tendency for professional practice to be performed in bureaucratic settings tends to aggregate clients, and could lead to 'client consciousness'—recognition of common interest in leashing professional power (Haug, 1973). Haug (1977) argues that computer technology is making specialized codified knowledge available to the masses, and that computer technology could contribute to improved review of professional performance by external parties.

Freidson (1984) in a critique of Haug's work argues that while important legal and legislative events have occurred in recent times that have weakened the professions' capacity to protect themselves from competition, "there has been no perceptible movement towards actually eliminating the quasi-monopolies or cartels provided by licensing, accreditation, and registration practice, nor any inclination to interfere with the professions' exercise of authority over their own technical areas of expertise" (p.12). The above is acknowledged by Haug (1976) who points out that much of a doctor's time is taken by playing the role of a bureaucratic gatekeeper (e.g., signing "certificates" which validate illness claims and the only channel to medications on prescription-only list). The literature on the sociology of professions provides useful insights into our understanding of the multifaceted nature of professions in general. The next section analyzes the recent developments in the accounting profession in New Zealand.

Recent Developments in the Accounting Profession in New Zealand

In the last five years the New Zealand accounting profession as well as the environment in which it operates have undergone tremendous change. This section explains these changes with some discussion on the historical background in order to determine in which direction the profession is evolving in New Zealand.

Historical Background

The emergence of the accounting profession in New Zealand can be traced to the formation of the Incorporated Institute of Accountants of New Zealand in 1894. Within three months the Institute had admitted 101 members, and later decided that no unexamined members will be admitted after 1896 (Graham, 1960). Dissatisfaction among potential entrants with the above decision led to the formation of the Accountants and Auditors Association in Auckland in 1898.

During this period, accountants in private practice also faced a threat in the form of a private member's Bill in Parliament, which sought to transfer the audit of all companies to the Government Audit Office and entrust all liquidations to the Official Assignee (Graham, 1960). Official support for the Bill however did not materialise, but rather a reversal of fortune led to the private audit of companies being made mandatory in 1901 (Graham, 1960). This contributed to a period of rapid development for the accounting profession.

The above threat, and the rapid growth of the accounting profession, led the Association to seek the co-operation of the Institute, in attaining legal registration in 1905. On the third attempt the NZSA was set up by the *New Zealand Society of Accountants Act* 1908 to control and regulate the practice of the profession of accountancy in New Zealand. In 1958 the original act was replaced by *New Zealand Society of Accountants Act* 1958. This revised Act placed restrictions on the usage of the terms 'accountant' and 'auditor' for members of the NZSA and tightened the self-regulatory powers of the NZSA.

In 1963 an amendment to the Act provided for the establishment of a fidelity fund to protect the public against defalcations by public accountants or their employees involving mainly in cases of theft, embezzlement, or misappropriation. The Accountants' Journal reported the creation of the fund as follows:

> Fidelity Funds of this nature are not a common feature of the accountancy profession abroad, as the unified control and statutory recognition which is a necessary prerequisite to an effective fund is not present in most countries.... The profession may well take pride in its record in past years, and defalcation by public accountants may be few indeed. Nevertheless the public is entitled to protection against losses arising from the occasional lapses that do occur, and the Fund will play its part, however small in reinforcing public confidence in the profession. (NZSA, 1964, p.244).All members of NZSA carried the designation 'chartered accountant' with the abbreviation 'ACA or FCA' depending on seniority.

In comparison with accounting bodies in other Anglo-American[1] countries the NZSA's achievement in attaining occupational control is most impressive. New Zealand has a single body representing the accounting profession, whereas Australia, the United States, the United Kingdom and Canada have two, three, six and three professional bodies, respectively. However, in some countries, e.g., the United States, members of the American Institute of Certified Public Accountants (AICPA) have a monopoly over public company audits through state legislation and in Canada the Canadian Institute of Chartered Accountants (CICA) has a partial monopoly over public company audits. In other countries, the accounting bodies work together in a number of areas through co-ordination bodies, e.g., in the United Kingdom there is the Consultative Committee of Accounting Bodies (CCAB) and in Australia there is the Australian Accounting Research Foundation (AARF). The splintered nature of the accounting profession in other countries and the failure to obtain control over the term accountant, however, is not due to a lack of trying.

There have been a number of unsuccessful merger attempts by the professional bodies in Australia and the U.K. (Macdonald, 1985; Chua & Poullaos, 1993; Walker & Shackleton, 1995).

Recent Developments

During the last five years there have been major changes in the structure of the accounting profession as well as in the institutional arrangements for accounting regulation in New Zealand. In 1991, the Institute of Chartered Accountants in Australia threatened to withdraw reciprocal practice rights for New Zealand ACA's if the New Zealand Society of Accountants failed to raise the standard of its education and admission policy (Lothian and Marrian, 1992). This threat motivated the NZSA to take some action, and the education committee of the Society invited the Institute of Chartered Accountants of Scotland to nominate an expert or experts to conduct a review of the current admissions policy of the Society. The two reviewers (Niall Lothian & Ian Marrian) presented their report in June 1992, and proposed major changes to the admissions policy.

Admission to the NZSA was through a mix of academic knowledge, practical experience, and professional appreciation. The applicants were required to:

1. Have completed a recognized Bachelor of Commerce Degree (or equivalent) or the National Certificate of Business Studies and National Diploma in Accountancy programs. Recognition of a program was determined with reference to a body of knowledge (BOK) specified by the NZSA.
2. Have completed three years of practical experience, one of which must be at an advanced level.
3. Have a pass in the NZSA's Final Qualifying Examination (FQE) (Lothian and Marian, 1992).

Lothian and Marian (1992) proposed that the NZSA move towards all graduate entry as soon as possible with a substantial liberal component in the program (previous efforts by the NZSA to move towards an all graduate entry in 1967 and 1971 was defeated in a ballot by members (NZSA, 1985)).

They also proposed the re-introduction of Approved Undertakings to screen suitable employers for the training of students and the establishment of Professional Accounting Schools for training of graduates intending to sit for Professional Competence Examinations to be set by the NZSA for admission.

Members in public practice had been required to undergo regular practice review since 1985 (NZSA, 1985) but there was no compulsory continuing professional development (CPD) requirement for general members. In 1991, a proposal by the Council of the NZSA to make CPD compulsory was defeated in a ballot by members. This rejection contributed to further differences between professional practice requirements of NZSA members and accountants in other Anglo-American countries.

While considering this report, the NZSA was also faced with another crisis. In early 1992, the criminal actions of an Auckland accountant resulted in $10.4 million worth of claims being made on the fidelity fund (Accountants Journal, May, 1992). To meet most of the claims, the Council of the NZSA had to impose a special levy of $3300 on all mem-

bers of the NZSA in public practice (Accountants Journal, October, 1992). Many members in public practice saw no reason why they should be required to make good the losses incurred through theft by another member of the Society, and threatened to withdraw their membership. This placed the Council of the NZSA in a dilemma. In July 1992, the NZSA made a submission to the Associate Minister of Finance seeking the abolition of the fund in the Act, and in return, the NZSA stated it was willing to sacrifice the restrictions on the use of the term 'accountant' in Section 32 of the 1958 Act (Accountants' Journal, October, 1992).

On 28 October 1992, the Government announced the abolition of the NZSA Fidelity Fund and the removal of statutory protection over the term 'accountant' or 'auditor.' Following the above events, the Council of the NZSA at its October meeting decided that a strategic and organizational review of the NZSA was required to prepare the NZSA for the year 2000 and beyond, and appointed a taskforce to perform it. The taskforce in turn commissioned a consulting firm 'Wheeler Campbell Limited' to undertake the review to ensure objectivity. The report by Wheeler Campbell, delivered in January 1993, became the basis for the subsequent changes.

The Wheeler Campbell report, prepared after extensive consultation with members of the NZSA, highlights a number of issues which many professional bodies would not admit exist. The report recognizes the regulatory role of a professional association, not in the context of a profession, but rather as an owner of a brand:

> We propose a conceptual framework that suggests that Society membership signals information about the quality of the services the consumer can expect. The ACA in this context can be seen as a brand, and brand reputation is the primary component of the Chartered Accountant product (Wheeler Campbell, 1993, p.3).

The brand, they note, provides important information on a product or service, based on perceptions of performance or reputation earned in the market, and reduces marketing cost to providers of a service. They also emphasize the need for the NZSA to protect and nurture the brand to ensure that its information content is relevant to the market's needs. Furthermore, they note a growing perception among members that statutory protection is irrelevant in a competitive market, and instead viewed statutory protection to be stifling on the management of the NZSA: "the statute has been a substitute for vision and strategy" (Wheeler and Campbell, 1993, p.5). In addition, the report identifies major divergence of interest between members in public practice and those not in public practice, and highlights public practitioners' interest in dynamic and ongoing quality control as well as standards of professional practice.

The need for a change in the consumer protection role of the Society from that of an administrator of an Act to that of assuring the consumer on the quality of the franchisees is also emphasized: "Membership of the Society could confer the status of evidence of quality of the service on offer" (Wheeler Campbell, 1993, p.6). The rationale for the change is the need for differentiation within the occupation: "The Society ought to offer a place and designation for those who want to differentiate themselves from all other accountants, provided they accept its membership criteria" (Wheeler Campbell, 1993, p.6). The Society's role in the development of accounting standards is also seen in a different light, not so much from a perspective of regulating the provision of accounting information, but rather

as a means to enhance "the credibility of the Society among its members and in the market. That credibility rubs off on the members" (Wheeler Campbell, 1993, p.8)

Based on the above perspective, the report proposed the division of the Society into three colleges, each with different admission and continuing education requirements for membership, and each carrying a separate designation. The apex college was to be known as the College of Certified Practising Accountants with the designation 'CPA,' the other two were the College of Associate Chartered Accountants with the designation 'ACA' (the current designation of Society members) and the College of Accounting Technicians with the designation 'AT.'

The NZSA in its "Blueprint for the Future" Document (NZSA, 1993) adopted the findings of the Wheeler Campbell Report with only minor changes. The NZSA changed the name of the apex college, from the College of Certified Practising Accountants to the College of Chartered Accountants with the designation 'A.' The blueprint (NZSA, 1993) also proposed that the name of the association be changed to the Institute of Chartered Accountants of New Zealand.

While making no new requirements on current members intending to retain the existing 'ACA' designation, those members intending to subscribe to the new 'CA' designation are required to complete 40 hours of professional development a year. The new entry requirements for membership of either the CA or ACA college are stringent (Figure 1).

New members intending admission into the college of accounting technicians are required to complete a two year academic programme leading to a recognized diploma and one year work experience with a mentor. Members intending admission to the ACA college are required to complete a four year academic programme leading to a recognised degree in a university or polytechnic consisting of 35-40% business related courses, 20-30% liberal courses and 35-40% accounting courses. On graduation they are required to complete one year general practical experience with or without a mentor and sit for a Professional Competence Examination I (PCEI) at the end of the period. On passing the examination they have to get a further two years specified practical experience with a mentor prior to admission to the ACA college. Members intending admission to the CA college have to go through the same requirements except that the two years specified practical experience has to be with a mentor in an Approved Training Organisation (ATO) at the end of which the candidate is required to complete a course of study at a Professional Accounting School and pass the Professional Competence Examination II (PCEII).

The changes to the structure of membership is also accompanied by changes to the management of the Institute. The process of electing Council members has been simplified with a more representative system whereby branches are entitled to elect one councillor for every 500 members. The president of the Institute is to be more akin to that of a board chairperson, with the Secretary of the Society replaced by a Chief Executive of the Institute. The Executive Board is the operational arm of the Council. The management structure is also to be divided into commercial activity and membership services with separate objectives of profit and service.

In addition to changes within the NZSA, accounting regulation in New Zealand has also undergone changes in recent years, the most significant of which being the establishment of the Accounting Standards Review Board (ASRB). The next section examines the circumstances that led to this change.

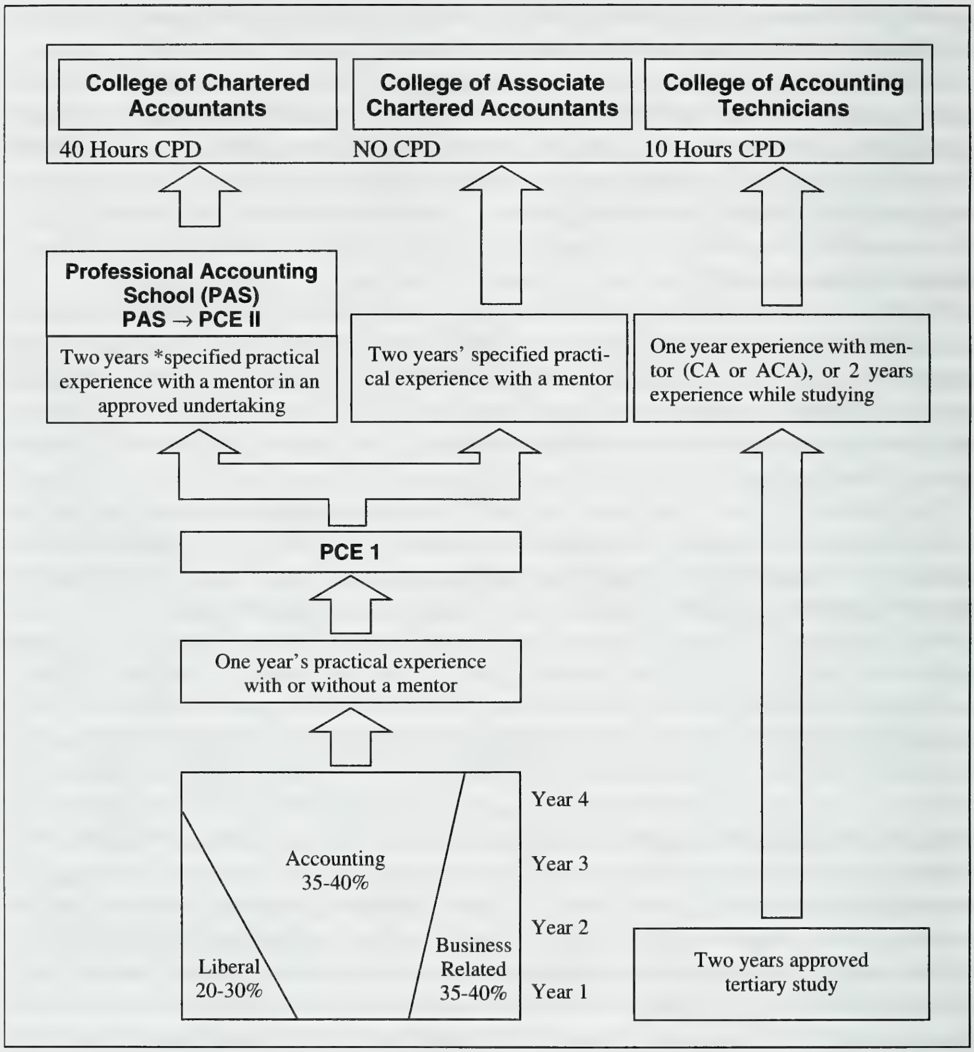

Figure 1. New Admissions Policy of the NZSA

Until 1993 the function of regulating financial reporting remained wholly in the private sector with implicit recognition in the *Companies Act 1955*. The New Zealand Society of Accountants took the sole responsibility for the development and issue of accounting standards. The development of accounting standards was the responsibility of the Accounting Research and Standards Board (ARSB) consisting of twelve members appointed by the Council of the NZSA. Further, enforcement of standards by the NZSA relied on persuasion and the requirements to disclose departures from standards with possible sanctions against members who failed in respect to such required disclosures.[2]

In the aftermath of the 1987 stockmarket crash a Ministerial Committee of inquiry headed by the former Reserve Bank Governor, Russell Spencer was appointed in October

1988 to review share market law and practices and to recommend changes needed to ensure a fair and efficient market. The Russell Committee Report (1989a, b) criticized the quality of financial reporting and the level of non-compliance with accounting standards in New Zealand. The report recommended that legal backing be awarded to accounting standards, the establishment of an Accounting Standards Review Board (ASRB) to approve accounting standards, and that sanctions be put in place for non-compliance of standards.

The Securities Commission (1990) in a review of the recommendations supported the Russell Committee's recommendations, and envisaged that the ASRB would be located outside the accounting profession's domain, and monitor qualified audit reports.[3]

Based on the above recommendations and other submissions from the NZSA and the New Zealand Stock Exchange, the *Financial Reporting Act* and a new *Companies Act* were enacted in 1993. The *Financial Reporting Act* governs all areas concerning the discharge of financial accountability of legal entities. In summary, the Financial Reporting Act:

1. Establishes an Accounting Standards Review Board (ASRB) and sets out its functions and powers.
2. Gives legal backing to financial reporting standards approved by the ASRB.
3. Requires issuers to file financial statements complying with generally accepted accounting practice (GAAP) and giving a true and fair view of their affairs.
4. Prescribes requirements for financial reporting by certain other entities including all companies.

The ASRB consists of between four and seven members appointed by the Governor-General on the recommendation of the Minister of Justice. The functions of the Board include:

1. Review and, if it thinks fit, approve financial reporting standards submitted to it for approval;
2. Review and, if it thinks fit, approve amendments to any approved financial reporting standards;
3. Encourage development of financial reporting standards; and
4. Liaise with Australian Accounting Standards Board (AASB) with a view of harmonizing financial reporting standards.

Accounting standards or amendments to accounting standards may be submitted to the ASRB by the NZSA and any other organization or person for approval. However, the *Financial Reporting Act* 1993 explicitly identifies the NZSA as a frequent source of standards.

In recognition of the above changes, the NZSA also reorganized its own arrangement for setting accounting standards. The ARSB has been dissolved and replaced with two new boards: the Financial Reporting Standards Board (FRSB) and the Professional Practices Board (PPB). The FRSB is responsible for preparing financial reporting standards and is expected to be the main provider of financial reporting standards for approval by the ASRB. Other responsibilities of the FRSB include publishing interpretations to financial reporting standards, and conducting research into financial reporting. The PPB is

responsible for issuing professional engagement standards (including auditing standards) and guidelines.

Deprofessionalization of Accountancy?

A review of the recent developments in accounting in New Zealand raises the question—Why did the NZSA, the most successful Anglo-American accounting body in attaining occupational control, sacrifice the reservation over the terms 'accountant' and 'auditor' which it worked so hard to obtain? This section examines this question and highlights that the costs of occupational control exceeds the associated benefits.

The voluntary sacrifice of the exclusive right to use the terms "accountant" and "auditor" can be related to the proliferation of occupations in the business sector. The proliferation of occupations led to the blurring of boundaries between occupations. This is highlighted in the Submission of the Society to the minister: "Despite that provision in the principal Act (restriction on the use of the term accountant), it is possible for people to resign from membership of the Society and practice as financial consultants or similar designation, and virtually continue to carry out the same activities they previously engaged in as chartered accountants" (NZSA, 1992b).

The blurring of the boundaries has been further compounded by the challenges to accountants' areas of competency. Armstrong (1987) attributes the rise of the accounting profession to the dominance of accounting controls in modern organizations. It is noted that accounting techniques, such as standard costing and budgets, play an important role in the extraction and allocation of surplus value within organizations. In recent times however, techniques developed by other occupational groups for the control of organizations such as just-in-time (JIT) manufacturing and total quality management (TQM) have gained prominence and introduced a source of competition for accounting controls:

> These technologies for governing the enterprise are in the process of transforming the organization and control of production processes. While it is too early to assess fully the extent and implications of such changes, it is none-the-less evident that accounting expertise, at least in the American setting, no longer automatically holds untrammelled sway (Miller and O'Leary, 1993, p.203).

Common interest and purpose have been identified as a critical factor in the professionalization process (Kedslie, 1990). The review of the changes in New Zealand highlights that the membership of the NZSA as a whole does not subscribe to the common goal of occupational control. The only service that is unique to the accounting profession is auditing. The provision of auditing services alone is, however, seen to be too restrictive. Therefore, accountants expanded their range of services to improve profitability and to prevent competitors from adjacent territory from moving into the accounting area. Most other services provided by accountants are also provided by other occupational groups, e.g., management consultants, investment planners and information consultants. The above situation contributed to the accounting profession accepting membership from a wide range of practitioners.

The membership of the NZSA consists of practitioners in divergent areas and employment contexts with little common interest except that they all subscribe to the 'ACA'

designation. For example, members not in public practice cannot see the rationale for spending the funds of the Institute on standard setting and other such activities, and feel they do not receive a fair deal, yet they remain members because the ACA designation provides them with some advantage in the market place (Wheeler Campbell, 1993). The existence of deep divisions between members of one accounting body working in different areas has also been highlighted by Tricker (1983) in a study on the Institute of Chartered Accountants in England and Wales (ICAEW):

> Many small practitioners would say to the Institute—leave us alone. We have been doing a very satisfactory job for many years. Our clients are satisfied. We do not need the imposition of the discipline of accounting and auditing standards from London (Tricker, 1983, p.21).

The establishment of the ASRB points to a growing role of the government in the regulation of accounting information. While, the membership of the ASRB at the moment is monopolized by the accounting profession (Hays, 1995), and all the draft standards to date have come from the FRSB, the institutional framework in place allows other interest groups through political manouvering to influence the standard setting process.

This could effectively leave the accounting profession with the regulation of the quality of auditing services only. Even this area is likely to be under threat from external regulation, e.g., in the United Kingdom the Auditing Practices Board is independent of the profession. The direct regulation of services minimises the need for doing it through occupations, it could also facilitate deregulation. The latter is supported by the view that the public interest is best served by a deregulated economic system where healthy competition is prevalent and areas reserved for professional activity are minimised (Lothian and Marian, 1992).

It has been highlighted earlier that the possession of exclusive control over access to knowledge in a particular area is crucial to the professionalization process. The old apprenticeship style training of accountants allowed the profession to maintain exclusive control over access to accounting knowledge. The profession's initial promotion of accounting as a university discipline, while contributing to greater recognition and status of the profession has contributed to the loss of monopoly by the profession over the knowledge area. In contrast to medicine, the accounting profession does not control the number of students graduating from accounting programs in New Zealand tertiary institutions, the profession only accredits the accounting programs. The providers of accounting education having different interests in comparison with the professions do not necessarily pursue common policies with regard to the production of professionals. The move to set its own exams is an indication of the need to differentiate the 'ACA' and 'CA' designation from that of a accounting degree.

The development of software packages, decision support systems and expert systems is also a source of threat to the profession's monopoly over accounting knowledge. A lay person needs only to familiarise him/herself with the package and input the raw data, based on which the package could generate periodic financial statements and also analysis of the financial statements. This development has considerably reduced the role of the accountant in the preparation of financial statements, and transformed the role of the accountant to that of an advisor.

Domination of work sites is identified as crucial to the professionalization process (Abbott, 1991). Recent statistics of the NZSA (NZSA, 1995) indicate that more than 60% of the membership is involved in non-accounting firms, i.e., are employed in work sites not dominated by accountants. Although about 30% are involved in accounting firms, a large number of them are involved as employees. Organizational employment contributes to bureaucratization of work, hierarchical differentiation within the profession, routinization of work at lower levels of the profession and the replacement of professional controls with organizational controls (Child and Fulk, 1982; Montagna, 1974).

Belkaoui (1991) argues that specialization in accounting accelerates the decline of homogeneity within the accounting profession and creates different subcultures, instead of shared socialization and a common culture. He also noted that accountants, bound by the specialized tasks, have lost control of the nature of the total product and may be indifferent to the outcome of the activities they were involved in (Belkaoui, 1991).

The replacement of professional controls by organizational controls is also pervasive in accounting firms and acknowledged by the profession. It is highlighted that the emergence of national and international accounting firms contributes to the standardization of work processes and procedures (Maclean, 1980; Stevens, 1981). The Institute of Chartered Accountants in England and Wales (ICAEW) in its proposed framework on 'Self-Regulation and the Quality of Professional Services' (1986) states "as regards 'reserved' work, it is realistic to acknowledge that responsibility for maintaining quality inevitably rests with the firm rather than with individuals" (p.142). The expansion of the Big Six firms into New Zealand has contributed to a similar situation in New Zealand.

The replacement of professional controls with organizational controls has considerably increased the powers of the big firms vis-a-vis the profession. For example, Bob Lamond, the national director of auditing for KPMG Peat Marwick in Australia, unhappy over some exposure drafts issued by the Australian Accounting Standards Board (AASB), suggested that the Big Six firms form a lobby group independent of the profession, to pursue its interest (World Accounting Report, 1994, p.5).

Haug (1973) identifies increased levels of client sophistication as a major contributor to loss of occupational control by the professions. There is considerable evidence that client sophistication and intense competition among accounting firms is having a major impact on the profession. Hanlon (1994) argues that the growth of the 'commercial' segment—tax, management services and corporate finance—and the stagnation of the 'public oriented' audit segment is contributing to the commercialization of accountancy. The provision of other services by accounting firms has also contributed to auditing services being used as loss-leaders in pursuit of non-auditing work (Sikka and Willmott, 1995). In a commercial environment a professional must give the consumer what he or she wants at the lowest possible cost. This in the long run undermines professional authority and contributes to deprofessionalization. The demand by preparers and users of financial statements for a greater influence in the standard setting process (Tower, 1991), 'opinion shopping' by auditees and 'lowballing' by auditors (Sikka and Willmott, 1995) clearly reflect such a find.

The above environment in which accounting operates has considerably reduced the benefits of having a reservation over the terms 'accountant' and 'auditor.' While the benefits have reduced, the cost of the reservation has been consistently rising. The reservation over the terms has placed accountants under greater public scrutiny compared to other occupa-

tions. Furthermore, it has placed greater responsibilities and, as pointed out in Wheeler Campbell (1993) retarded innovative developments within the accounting profession.

While, the above study is mainly based on New Zealand evidence, many of the trends contributing to deprofessionalization are common to other Anglo-American countries. For example, the influence of decision support systems and expert systems, the replacement of professional controls with organizational controls, and increased levels of client sophistication are more pronounced in the United Kingdom and United States than in New Zealand. Further, in the United Kingdom the intense competition among the professional bodies has led to a situation where they undermine the others authority and status (Layhe, 1993). As highlighted earlier the accounting profession in the United Kingdom has also lost control over the accounting and auditing standard setting process. In the United States, Mednick (1996), a managing partner of Andersen Worldwide, states that occupational control through regulation is obsolete and calls for the regulation of firms rather than individuals. He says:

> The truth is, the one protected area of practice for the CPAs—the so-called attest function—is declining in importance in most CPA firms, and it will be virtually impossible to enlarge the future range of services reserved to CPA's by statute. As a result, our future well-being—both the profession's and Institute's—is in adopting a market based model... (p.38).

Furthermore, in the United States standard setting is performed by and independent body, the Financial Accounting Standards Board (FASB).

CONCLUSION

This paper challenges the dominant view in the international accounting literature that professionalization is crucial to the development of accounting and points out that recent changes in the accounting arena in New Zealand are in the direction suggested by the alternative view—the deprofessionalization of accounting.

Evidence is provided to show the presence of a deprofessionalization process in New Zealand, e.g., the boundaries between accountancy and other occupations are becoming increasingly blurred; the dominance of accounting controls in organizations is being challenged; the profession is unable to control access to accounting knowledge, to prevent government intervention in the areas of work standards and bureaucratic controls in the work place. The profession in New Zealand still maintains a monopoly over a narrow area of work - the audit of reporting entities (Financial Reporting Act 1993). This monopoly however could be threatened if accounting firms decide to corporatize and the law starts recognizing the organization (audit firm) rather than the individual as the auditor.

This paper highlights the limitations of the professionalization view and the need for researchers in the international accounting area to be more critical when studying changes in the accounting profession.

NOTES

1. In this paper Anglo-American countries refers to New Zealand, Australia, United Kingdom, United States and Canada.

2. For a detailed discussion on various aspects of accounting regulation in New Zealand prior to 1993, see Tower, (1991).
3. For a more complete discussion of the changes suggested see Tower, Perera and Rahman (1992).

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Culture and Accounting in Indonesia: An Empirical Examination

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Key Words: Culture, Financial reporting, Accounting regulation

Abstract: *This study examines the relationships among the cultural characteristics of Indonesian society, reporting practices of Indonesian firms, and accounting standards promulgated by the Association of Indonesian Accountants. It is argued that an empirical relation exists between the change in cultural values, as conceived by Hofstede's theory of the five dimensions of cultural values (power distance, uncertainty avoidance, individualism, masculinity, and time horizon and the change in accounting values as captured by Gray's four dimensions (professionalism, conservatism, secrecy, and uniformity). Using LISREL to evaluate data between 1981 and 1992, three of Hofstede's five cultural values (power distance, uncertainty avoidance, and individualism) have significant relationships with one or more accounting value. This limited confirmation of the culture-accounting relationships suggest that particular historical and economic configurations must be considered in longitudinal analysis. The conflicting influences of extensive government involvement in the economy and nascent market competition are a possible explanation of the Indonesian results.*

The case of Indonesian accounting is interesting for a variety of reasons. The emergence of rapidly expanding conglomerates and state enterprises may increase the need for firms to provide more elaborate disclosure of information to a wider set of interested parties. However, the persistence of historical factors, such as trade protection, entry barriers to competition, oligopoly, and the lack of a well developed capital market tradition, may make firms less inclined to provide information to the public. Since Dutch and U.S. accounting practices have influenced Indonesian accounting practice, the differences between Dutch and U.S. accounting may explain some of the more unique aspects of accounting development in Indonesia.

This paper considers the relationship between accounting and culture in the Indonesian setting. Implementing established models in the literature, longitudinal results are offered that suggest that the development of accounting standards and disclosure practices are patterned by change in cultural norms.

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LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The Dimensions of Culture

The theory of cultural dimensions developed by Hofstede (1980) has been widely studied in the fields of sociology, organizational theory, and more recently in accounting literature. An analysis of the Social Citation Index reveals that over the period 1981–1992, the theory has been cited in 583 studies in many different fields. In addition to suggesting the existence of a substantial consensus among researchers as to a theory of culture, it also mitigates the need for an elaborate introduction. Hofstede proposes five cultural dimensions. *Power Distance* is a measure of the interpersonal power or influence between social groups. It shows the extent to which the less powerful members of institutions acknowledge that power is distributed unequally. Power distance pertains to the relationship between superiors and subordinates and to the nature of the communications that is likely to occur between these groups. *Uncertainty avoidance* measures anxiety levels of the members of a society as to uncertain or unknown situations in the future. Societies vary in the extent they prefer structure and stability in relationships and in their demands from technology. *Individualism* measures the extent personal autonomy is privileged over collectivities. It relates to the strength of bonds between individuals, the need for loyalty and the extent of responsibility for others. *Masculinity* is a measure of the desirability of assertive behavior and external achievement. Reflecting male-female gender roles, masculinity is contrasted with societal dispositions toward modesty, nurturance, and cooperative behavior. *Long-term orientation* reflect the extent to which societies rely on the slow construction of synthetic solutions that do not produce short-run results. This cultural tolerance does not prize persistent incremental progress or decompositional analysis.

Hofstede has shown that these dimensions of culture provide a viable means to compare nations. However, whether or not these dimensions also provide a meaningful way of approaching the change in culture within a single society has not been addressed.

Cultural Influence on Accounting

Gray (1988) theorized connections between Hofstede's cultural values and accounting values. By doing so, he provided the most comprehensive description of the ways that accounting systems can differ as a result of cultural variation. Gray's model describes accounting values in four dimensions. *Professionalism* measures a preference for the exercise of individual professional judgment and the maintenance of professional self-regulation, as opposed to compliance with prescriptive legal requirements and statutory control. *Uniformity* is a preference for the enforcement of uniform accounting practices between companies and for the consistent use of such practices over time, as opposed to flexibility in accordance with the unique circumstances of individual companies. *Conservatism* is the preference for a cautious approach to measurement as a generalized view of the uncertainty of future events. This is opposed to a more optimistic, laissez-faire, risk taking approach. *Secrecy* is a preference for confidentiality and the restriction of disclosure of business information to those who are closely involved with its

management and financing. As such, it can be contrasted to a more transparent, open and publicly accountable preference.

Expected Relationships

The work of Hofstede and Gray creates a basis for the exploration of the relationship between changes in the five cultural values and changes in the four accounting values. If culture and accounting are related through these dimensions in a meaningful way, they should be associated through time within the confines of a single nation. Therefore:

> **H_1:** Change in power distance is related to the change in accounting values in the Indonesian context.
>
> **H_2:** Change in uncertainty avoidance is related to the change in accounting values in the Indonesian context.
>
> **H3:** Change in individualism is related to the change in accounting values in the Indonesian context.
>
> **H4:** Change in masculinity is related to the change in accounting values in the Indonesian context.
>
> **H5:** Change in time orientation is related to the change in accounting values in the Indonesian context.

Specific expectations for professionalism, uniformity, conservatism and secrecy can be denominated as subparts A, B, C, and D within each hypothesis.

METHODOLOGY

Measurement

Constructs involving culture and accounting values are not readily observable. Following Hofstede (1980) and Gray (1988), multiple measures were adopted for each theoretical construct and measured for each year in the sampling frame. Table 1 details the operationalizations of the constructs in this study. Beyond this, a brief rationale for the measures is appropriate. More detailed information can be found in Sudarwan (1995).

Hofstede (1980; 1991) suggests that the wealth of nations is one of the predictors of the variance in *power distance* between nations. Therefore, rooting its measure in educational characteristics and in technological development statistics appeals to ideas about conditions underpinning wealth creation. Hofstede (1991) suggests that the amount and coverage of codified laws indicate degrees of *uncertainty avoidance*. Accordingly, this construct is operationalized in terms of the magnitude and scope of governmental deregulation initiatives. Wealth provides people with resources to pursue interests that may be different from the interests of others (Hofstede 1991). This suggests that income per capita and the urbanization rate will provide measures of *individualism*. Since *masculinity* maps

Table 1. The Link Between Culture Constructs and Proxy Variables

Constructs	*Environmental Indicators*	*Proxy Variables*	*Rationale of the Proxy Variables*
Power distance:			
The extent that the less powerful members of institutions accept that power is distributed equally.	a) The advancement and diffusion of information and telecommunication technology in a society Information itself is a power The availability and accessibility of information to the general public provide a chance for people to get a share of the power of this information. In this situation, people will care less about the inequality of the distribution of other forms of power. Information and telecommunication technology facilitates people with access to available information	– Number of telephone lines available (X1). – Ratio of telephone lines to population (X2).	Thee telephone is a major part of the information and telecommunication technology. It is the more readily available means for information distribution in modern society. Moreover, telephone, unlike broadcasting telecommunication, is a means for two-way communication. Parties involved in telephone communication have an active role in shaping the forms, availability and accessibility of the information.
	b) The role of traditional agriculture in the process of wealth creation in a nation. Workers in traditional agriculture usually have less bargaining power than workers in manufacturing industries. Accordingly power distance tend to be high in agricultural societies	– Ratio of non-agriculture sectors to Gross Domestic Product (X3).	The results of wealth creation process in a nation culminates in the Gross Domestic Product figures.
	c) Education levels of the middle class society. Education may reduce the gap between the powerfl and the powerless.	– Total student enrollment (X4). – Ratio of student enrollment to population (X5).	Student enrollment reflects the awareness of the society of the important roles of education.
	The scope and details of government regulation. Less regulation is a sign of flexible societies. The members of the societies are deemed to be competent and capable of dealing with uncertainty.	– Number of economic deregulation policy packages (X6). – Number of economic sectors being deregulated (X7).	Government deregulation policies represent a trend towards a less regulated and more mature society. Since economic sectors relate to other aspects of social life, economic deregulation policies provide a good proxy to the adaptability of the society to the lessening regulation.

Constructs	*Environmental Indicators*	*Proxy Variables*	*Rationale of the Proxy Variables*
Uncertainty Avoidance:			
The readiness of a society to cope with uncertain or unknown situations in the future.	The scope and details of government regulation. Less regulation is a sign of flexible societies. The members of the societies are deemed to be competent and capable of dealing with uncertainty.	– Number of economic deregulation policy packages (X6). – Number of economic sectors being deregulated (X7).	Government deregulation policies represent a trend towards a less regulated and more mature society. Since economic sectors relate to other aspects of social life, economic deregulation policies provide a good proxy to the adaptability of the society to the lessening regulation.
Individualism:			
The degree of bondedness among individuals in a given society.	a) The attractiveness of urban living to the society. Competition and pressure found in urban living may force people to take care of only themselves and their immediate family.	– Urbanization rate (X8).	When more and more people live in urban areas, the society perceives that cities are more attratice compared to villages.
	b) The advancement of economic development. Wealth facilitates people to pursue their own interests and to be less dependent on others.	– Income per capita (X9).	Economic development results in a change in income per capita. More advance economic development is reflected in a high income per capita.
Masculinity:			
The dominance of one gender role over the other in societal activities.	a) Composition of work force by sex. Interactions among people in work place play a significant role in developing organizational cultures which are part of national culture. Thus, the composition of work force by sex may reflect gender roles in shaping organizational and national and organizational cultures.	– Ratio of male employment to total employment (X10).	Employment is a good measure of the active work force.
	b) Education levels of men and women. Education is one of the important factors in shaping one's ideas and values. Education levels of men and women may indicate the possible contribution of each gender to the development of societal values.	– Ratio of male to female students in elementary school (X11). – Ratio of male to female students in secondary school (X12). – Ratio of male to female students in higher education (X13).	The levels of formale education are a good proxy for the reasoning ability that each gender may contribute to the development of societal ideas and values.

(Continued)

Table 1. The Link Between Culture Constructs and Proxy Variables. Continued

Constructs	*Environmental Indicators*	*Proxy Variables*	*Rationale of the Proxy Variables*
Time horizon:			
Long-term and short-term orientations of a society.	Trend in capital and human investments. The preference for capital and human investments indicates people's willingness to commit to a long term project. In so doing, they may have to defer the short-term satisfaction of consumption in favor of expecting to reap long-term benefits of the investments in the future.	– Ratio of Gross Fixed Investment to Gross Domestic Product (X14).	This variable measures the preference for allocating certain proportions of national income for investments.
Professionalism:			
The preference for the exercise of professional judgement and self-regulation.	a) Expert certification of firms' financial reports.	– Type of firm's auditors (Y1). – Type of auditors' opinion on firm's financial reports (Y2). – Deviation of the Indonesian accounting standards found in firm's financial reports (Y3).	Certified auditors are the legitimate experts in the attestation of firms' financial reports. Auditor's opinion on firm's financial reports is determined by the levels of compliance of such reports to the professional standards.
	b) Self-regulatory process of the accounting profession	– Number of accounting standards (Y4) – Number of auditing standards (Y5) – Contents of accounting standards (Y6)	The extent of the standards issued by the accounting profession reflects the role of accounting self-regulation in the process of firms' financial reporting.

Constructs	*Environmental Indicators*	*Proxy Variables*	*Rationale of the Proxy Variables*
Conservatism:			
The preference for a cautious approach to the disclosure of firms' operating results and financial condition.	Asset and income measurements.	– Accounting policy on asset measurement (Y7). – Accounting policy on income measurement (Y8).	Firms' accounting policy reflects the preference of managers of firms for the disclosure of firms' operating results and financial condition.
		– Accounting methods permitted for accelerating expenses and decelerating income (Y9). – Accounting methods permited for making assets undervalued and making liabilities overvalued (Y10).	Accounting standards are a product of the deliberation process that results in the acceptance of certain preference of accounting methods by the accounting community.
Secrecy:			
The preference for confidentiality and the restriction of the disclosure of firms' operating results and financial condition.	Disclosure requirements of firms' financial reports.	– Contents of the financial reports (Y11).	The extent of financial reporting depends on the willingness of firms to be open to the public.
		– Comparison of the contents of financial reports to the U.S. accounting standards (Y12).	The U.S. accounting standards are widely consideredto be a benchmark for the extent of the disclosure of financial reports.
		– Balance sheet disclosure required by Indonesian accounting standards (Y13) – Income statement disclosure required by Indonesian accounting standards (Y14).	Disclosure requirements in the Indonesian accounting standards show the desired disclosure of financial reports of Indonesian firms.
Uniformity:			
The preference for uniform accounting practice.	Consistency and comparability of the contents of firms' financial reports.	– Number of changes in accounting methods from the ones applied in the prior year financial reports (Y15).	Accounting changes result in a less consistent meaning of the information disclosed in firms's financial reports.
		– Comparison of accounting policy across firms (Y16).	Similar accounting policies will result in more comparable financial reports.
		– Number of alternative accounting methods for balance sheet items (Y17). – Number of alternative accounting methods for income statement of items (Y18).	The availability of alternative accounting methods is a source of inconsistency and lower comparability in firms' financial reports.

well into gender roles and into the gendered division of labor (Hofstede, 1980), the composition of employment by sex serves as a measure of current societal masculinity. The observation of the composition by sex of students provides a future measure of masculinity. Hofstede (1991), in his use of the Chinese Value Survey to develop a *time horizon* index, indicated the importance of the conservative use of resources. For these purposes, the percentage of Gross Fixed Investment in the Gross Domestic Product indicates a deferral mentality. A firm societal commitment to spend more on educational programs in order to further the society's investment in human capital also is considered.

The main characteristics of *professionalism* are a preference for the exercise of professional judgment and the maintenance of professional self-regulation (Gray 1988). For several reasons, the nature of auditors and the general description of their work product provide appropriate measures. To address accounting standards, the professionalism of accounting practice is measured with the number of accounting methods not permitted by Indonesian accounting standards but applied in financial reports, and by the number of accounting and auditing standards issued by the Association of Indonesian Accountants. Since *uniformity* entails consistency and comparability, measures for uniformity in accounting practice included the number of accounting changes, comparative accounting policy across firms within any one reporting period, and the number of alternative accounting methods prescribed in the Indonesian accounting standards for both balance sheet and income statement items. *Conservatism* in accounting practice took on its typical meaning (see Hendriksen & Breda 1992) as it related to permissible accounting methods. *Secrecy* can be measured by the number of balance sheet items and the number of income statement items prescribed in the Indonesian accounting standards. This can also be placed in a relative context with U.S. accounting standards serving as a benchmark. The more U.S. accounting standards are approached, the less secretive is Indonesian accounting practice.

Data Collection and Sampling Frame

This study used data that covers a twelve year period (1981-1992). This period is uniquely appropriate because of the significant transformation that occurred in Indonesia during that time (Robison, 1991). Data related to cultural values were obtained from various reports and archives, including the United Nation's Statistics Reports, International Statistics, International Marketing Data, and Indonesian Economic Trends.

Financial reports were obtained from firms that publish financial reports in English. These firms include both state enterprises and private corporations. Financial reports of state enterprises were provided by the Development and Finance Supervisory Board, a government agency whose tasks include the audit of state enterprises. Financial reports of private enterprises were provided by the International Finance Corporation, a World Bank organization that provides long-term loans and venture capital to private enterprises in developing countries. Another group of financial reports was obtained from firms listed in the Jakarta Stock Exchange. These financial reports were provided by the Capital Market Supervisory Board to which firms listed in the Jakarta Stock Exchange submit their financial reports. In total, 108 financial reports comprise the sample. Fifty-seven reports were published in English while the remaining 41 reports used the Indonesian language. Fifty

reports were from state enterprises, and 58 reports were from private enterprises. Organizations span many different industries including manufacturing, farming, financial services, hotel, and transportation.

The sources of data related to Indonesian accounting and auditing standards are *Prinsip Akuntansi Indonesia 1984* and *Norma Pemeriksaan Akuntan.* Both are the official publications of the Association of Indonesian Accountants (Ikatan Akuntnasi Indonesia) that contain, respectively, Indonesian accounting standards issued by the Association before 1992, and Indonesian auditing standards promulgated by the Association until 1990.

Data Analysis

The structural equations software LISREL (Joreskog & Sorbom, 1989) was used to analyze the data. LISREL reduces the arbitrariness of selecting the measures (observable variables) that compose latent variables (theoretical constructs). LISREL provides an analysis to test the validity of such a selection by incorporating estimates of the discrepancy between observed variables and latent variables in the test of the relationships among constructs. LISREL also considers all possible connections among constructs under study as a single model. This compares favorably to tests that provide more selective tests of the connections among constructs (i.e., regression and ANOVA).

RESULTS

Confirmatory Factor Analysis

As a prelude to the hypothesis tests, LISREL assesses the integrity of the proposed model through confirmatory factor analysis. This information has the potential to alter the exact nature of the results that are sought through the hypotheses tests by questioning the viability of the theoretical constructs. The accounting values set forth by Gray (1988) proved to be independent constructs in the Indonesian context. Professionalism, uniformity conservatism and secrecy were not redundant nor non-parsimonious. All measures proved significantly related to the theoretical constructs as expected. Four latent variables for culture (*power distance*, *uncertainty avoidance*, *individualism*, and *masculinity)* proved to be a superior expression of the independent variables. The fifth dimension of culture, *time horizon*, was not found to be a independent factor within the cultural values in Indonesia. Therefore, the fifth hypothesis set involving time orientation effects could not be tested.

Two observed variables that were originally intended to measure the dimension of *time horizon* (ratio of Gross Fixed Investment to Gross Domestic Product and the ratio of spending on education to total government spending) loaded significantly on *individualism*. Therefore, they were included as additional measures of individualism.

Further analysis revealed that fourteen out of the other fifteen observed variables have a significant relationship to the four remaining dimensions of Indonesian culture. However, the ratio of student enrollment to total population was not related to any of the latent variables. This measure was excluded from subsequent analysis.

Hypothesis Tests

The cultural values were hypothesized to have pervasive relationships with professionalism, conservatism, secrecy and uniformity of accounting practice. Figure 1 reports the results of the final LISREL model that includes all significant effects. Conventional LISREL presentation involves the depiction of a "trimmed" model as shown in Figure 1. This is the result of starting with a model of all hypothesized effects (the full model) eliminating the not significant effects that improve the overall fit of the model.

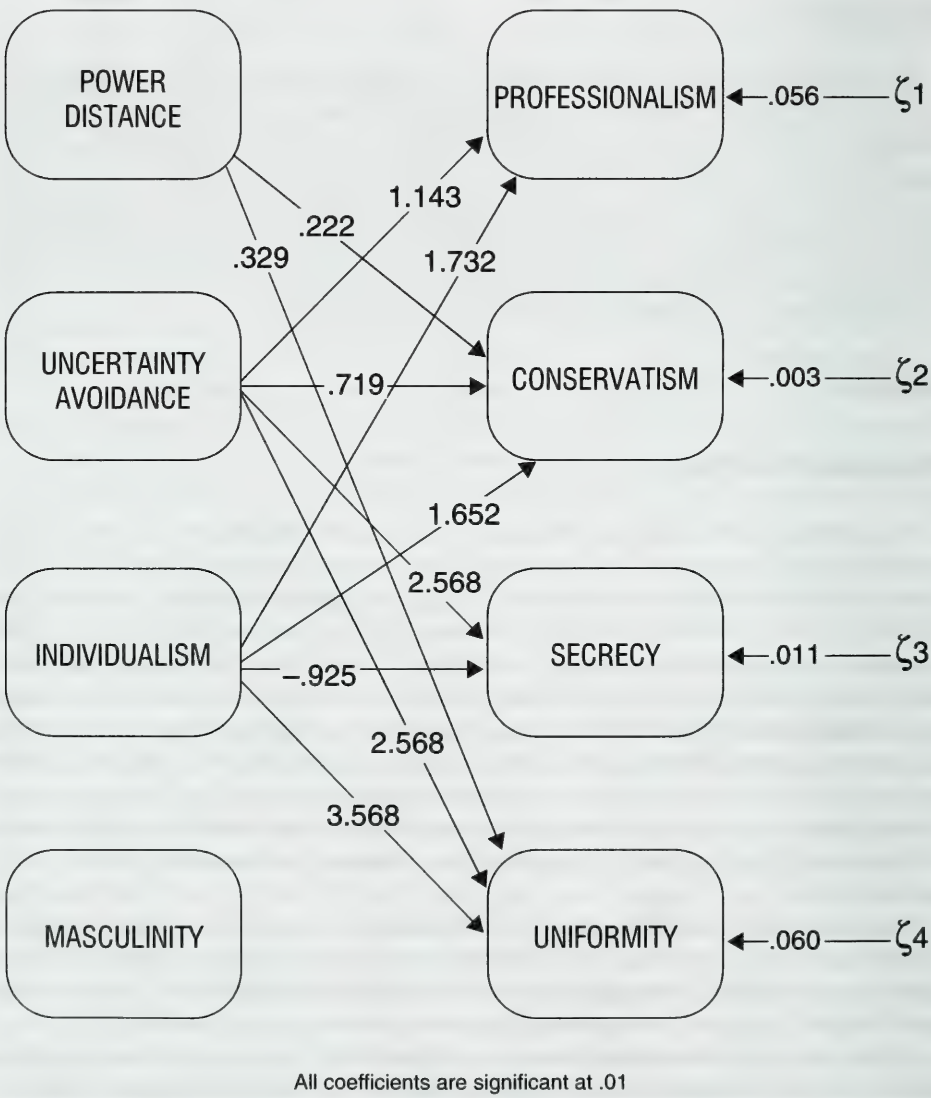

Figure 1. Structural Equation Model for the relationship between Culture and Accounting Practice (Tested Model)

1. Power Distance Effects: Hypotheses 1A-1D

Test results indicate a positive relationship between power distance and conservatism. The relationship has a regression coefficient of .222 and a t-value of 5.248. Thus, the relationship is significant at .001 and Hypothesis 1C is supported. Reductions in power distance is related to decreases in conservatism.

Hypothesis 1B predicts a relationship between power distance and uniformity. The t-value for such a relationship of 2.008 indicates the relationship has a significance level of $p < .05$. Hypothesis 1B is supported.

Results of the hypothesis testing indicate no significant relationship between power distance and professionalism. Therefore, Hypothesis 1A is not supported. This suggests that changes in power distance in Indonesian society may not have any impact on changes in professionalism of accounting practice in Indonesia. Hypothesis 1D predicts a relationship between power distance and secrecy. Results of the hypothesis testing indicates no significant relationship between power distance and secrecy. The t-value of the gamma between secrecy and power distance is not significant at $p < .05$. Hypothesis 1D is not supported.

In sum, two out of the four hypotheses pertaining to the relationship between power distance and accounting values are supported. The supportive evidence for this hypothesis set is mixed.

2. Uncertainty Avoidance Effects: Hypotheses 2A-2D

Tests of Hypothesis 2A evaluate the expectation that professionalism is related to uncertainty avoidance. The test result shows a *positive* relationship between uncertainty avoidance and professionalism of the Indonesian accounting practice significant $p < .05$. Contrary to intuition, a decreasing trend of uncertainty avoidance is not associated with a stronger commitment to professionalism in the preparation of financial reports.

Hypothesis 2B predicts a positive relationship between uncertainty avoidance and uniformity. The tests of this hypothesis provide supportive evidence of the positive relationship between uncertainty avoidance and uniformity. The regression coefficient of 2.586 is significant at $p < .001$.

Tests of hypothesis 2C provide supportive evidence for the expected relationship between uncertainty avoidance and conservatism. The t-value of 4.418 indicates that the structural equation coefficient has a significance level of $p < .001$. Hypothesis 2C is supported.

Hypothesis 2D predicts a relationship between uncertainty avoidance and the secrecy of accounting practice. Tests of this hypothesis 2D provide supportive evidence for an inverse relationship. A decrease in uncertainty avoidance is significantly associated with a more secretive accounting practice. This direction is also not intuitive.

In sum, all four hypotheses between uncertainty avoidance and accounting values are significant. However, the curious direction of two of these effects cannot be ignored.

3. Individualism Effects: Hypotheses 3A-3D

Hypothesis 3A predicts a relationship between individualism and professionalism. The test resulted in a regression coefficient with a t-value of 4.018. The results indicate that a

positive relationship between individualism and professionalism in accounting practice is significant at $p < .001$. As individualism increases, the professionalism of accounting practice also increases.

Hypothesis 3C predicts a relationship between individualism and conservatism. Test results show a coefficient between individualism and conservatism of accounting practice of 1.652 with a t-value of 11.302. The results suggest that such a positive relationship is significant at $p < .001$. Thus, increase in individualism is associated with increases in the conservatism of accounting practice.

Test results show a negative relationship between individualism and the secrecy of accounting practice. The regression coefficient between individualism and secrecy is –.925 with a t-value of –4.552. The negative relationship between the two variables in Hypothesis 3D is significant at $p < .001$. The results suggest that a decreasing trend in the individualism of the Indonesian society is associated with the increasing trend of secrecy of accounting practice.

Hypothesis 3B predicts a negative relationship between individualism and uniformity. However, test results show a positive relationship between individualism and uniformity of a sufficient magnitude to produce a significance level of $p < .001$. A decrease in the individualism of the Indonesian society is associated with a decrease in the uniformity of accounting practice. Thus, hypothesis 3B was not supported.

4. Masculinity Effects

Results of the hypothesis testing for the fourth set indicates no significant relationship between masculinity and accounting values. The t-values for these gamma coefficients did not approach the necessary levels. No hypotheses pertaining to this cultural value was supported.

DISCUSSION

The Nature of Cultural and Accounting Values in Indonesia

The findings of this study suggest that only four of Hofstede's five cultural values (*power distance, uncertainty avoidance, individualism,* and *masculinity*) are necessary to the description of Indonesian culture. The fifth dimension of Hofstede's cultural values, *time horizon*, was not found to be a unique dimension of Indonesian culture. The fact that this dimension was added retrospectively to the other four (Hofstede, 1991) also suggests that it is conceptually redundant.

Unlike other Asian nations that are steeped in Confucianism, the Indonesian society may not consider that the future is more important than the present. The importance of the future is appreciated only through its tangible impact on the present condition. Thus, the structure of the Indonesian culture does not require the separate statement of this dimension.

The development of accounting practice in Indonesia can be classified into the components of professionalism, conservatism, secrecy, and uniformity developed by Gray

(1988). This finding suggests that the development of accounting practice in Indonesia is comparable to that of other nations, insofar as these four dimensions are required for a parsimonious and complete explanation.

Cultural Change and Accounting Change in Indonesia

The hypotheses tests sought support for sixteen specific relationships. Significant levels of association were reached in nine cases. These mixed results validate the plausibility of taking a detailed look at the connection between accounting practice and culture in one nation over a period of time. At the same time, they also indicate that the specific relationships that comprise the accounting-culture nexus are quite variable. The specific patterns of relationships are worthy of attention.

The professionalism of accounting practice was found to be positively related to individualism but not related to power distance or to uncertainty avoidance. An increase in national wealth drives societies toward low power distance societal norms (Hofstede, 1980; 1991). An analysis of Indonesian economic development, however, indicates that the creation of national wealth depends heavily on government initiatives. In this situation, the process of national wealth creation does not reduce the importance of government authority to the key parties involved in such a process. Thus, for such parties, the increase in national wealth may not necessarily result in a reduction in power distance or an increase in professionalism.

The success of both state and private enterprises, to some degree, has been the result of a great reliance on government policies *and* access to government authority. Professionalism in conducting business may have become secondary to the ability to make arrangements with the government. Since the preparation of financial reports also reflects this pattern of doing business, professionalism may not be a key factor.

The government's influence is apparent in many aspects and stages of the accounting profession. This may make the accounting profession very cautious in setting accounting and auditing standards. Necessary steps are taken to avoid any conflict between professional standards and government regulation. This environment is not conducive to the emergence of self-regulation within the accounting profession.

The attachment of business activities to government authority may negate the consequences of the increase in national wealth and the reduction in government regulation for the changes in power distance and uncertainty avoidance of the accounting community. As a result, changes in the above environments may not have any impact on the Indonesian accounting practice. This interpretation, however, does not necessarily apply to other segments of the Indonesian society. For society at large, the increase in national wealth and the reduction in government regulation may have had an impact on societal norms related to power distance and uncertainty avoidance. But for certain segments of the society, such as the accounting community, institutional consequences of the changes in societal norms are not automatic. A reduction in the reliance of the accounting community on government authority may be a necessary condition for such substantive change in the Indonesian accounting profession.

That individualism is positively related to the professionalism of accounting practice may be based on the increasing competition among firms. In such an environment, manag-

ers of firms are under constant pressure to exercise their professional skills to outperform their competitors. This could also mean that professionalism is needed in the preparation of financial reports.

This result, however, is not consistent with the findings of the tests which suggests that market competition in the processes of firm's wealth creation is not associated with the increase in the professionalism of accounting practice. Examinations of data that measure individualism and of the confirmatory factor analysis show that the results do indicate that individualism of Indonesian society may have decreased over the 1980s. This suggests that the individualism of society and that of business management may be different constructs.

An increase in competition does not associate with an increase in the professionalism of accounting practice when access to government authority can circumvent the need for professionalism in a competitive environment, especially if the self-governance structure of the professional community is relatively immature.

The tests of hypotheses provide supportive evidence of the positive relationship between uncertainty avoidance and the conservatism of accounting practice. This implies that as the government lessens control over economic activities through its deregulation policy, firms have to deal with increasing competition. Competition does not allow managers of firms to deal only with secure businesses. An overemphasis on a conservative approach to doing business may force firms to pass investment opportunities to others. This may affect the firms' performance in product and financial markets.

In financial markets, competition requires that firms seeking funds from the markets provide evidence to convince potential investors of promising returns given risks. In this case, a firm's cost of capital becomes a function of firms' success in this process. Impressing potential investors with a firm's success potential is crucial to improve firm's competitiveness in financial markets. Since firms' financial reports are an important source of information in competitive capital markets, firms seek to provide information in their financial reports look good. In the short-run, firms are less likely to choose conservative accounting methods to measure and disclose firms' values in the financial reports.

Test results show a positive relationship between the two constructs. As discussed in the previous section, individualism had a decreasing trend. Thus, the findings suggests that both the individualism of the Indonesian society and the conservatism of accounting practice were low.

The previous discussion also explained that although the individualism of the Indonesian society in general was decreasing, firms' environments had an increasing trend of individualism. This leads to an interpretation that apart from the general condition of the Indonesian society, individualism as it relates to a business entity's environment was increasing while the conservatism of accounting practice was low. If so, the increase in the individualism of such firms would correspond to a negative relationship with the conservatism of accounting practice. Increasing competition motivates firms to favor risk taking behavior and to select less conservative accounting methods.

The test results also show an unexpected positive relationship between power distance and the conservatism of accounting practice. The process of national wealth creation provides an explanation for this result. Modern Indonesian wealth creation requires capital participation from various sources. When this depends on government authority, there is a lack of competition among firms to attract funds from capital markets. Accordingly, firms

are not subject to public scrutiny. Information of firms' operating results and asset position can be limited to a few well-connected groups. Firms do not need to be concerned about providing information regarding their success to outside investors and other parties.

But as wealth accumulation increases the accumulated capital of the established, well-connected groups may not be sufficient to fulfill the expanded needs for firms' capital. Firms then must look to capital markets for additional sources. In an efficient capital market, publicly available information of a firm's performance influences a firm's attractiveness. Since financial reports serve as one medium for firms to dispense information of their performance, firms may choose aggressive accounting policies. Competition is again identified as the possible driving factor for less conservative approaches to the preparation of financial reports.

The tests of the hypotheses indicate no significant relationship between power distance and the secrecy of accounting practice. The results also do not provide supportive evidence of the positive relationship between uncertainty avoidance and the secrecy of accounting practice. The results, however, do provide supportive evidence of the negative relationship between individualism and the secrecy of accounting practice.

Reliance of the business community on government authority may also negate the effects of the increase in national wealth on the process of lessening the secrecy of accounting practice. The importance of being able to deal with government authority gives incentives to business to build personal access to the source of such authority and to prevent others from sharing such personal access. Therefore, the increase in national wealth may not be followed by a reduction in power distance and in the secrecy of accounting practice.

This result, however, is in contrast to the suggestion of a positive relationship between power distance and the conservatism of accounting practice. As discussed in the previous section, the wealth creation process required to support large scale enterprises, regardless of the reliance on government authority, necessitates that firms develop capital sources from potential investors, especially as the need for capital increases in magnitude. Once the firms succeed in gaining funds from general capital markets, they have to make more information available to investors. Consequently, firms will have to reduce the secrecy of accounting practice. It is not clear that this has to occurred in any great degree in Indonesia.

Indonesian firms and the nation's accounting profession have depended on government guidelines for certainty. Government deregulation lessens the availability of such guidelines. The accounting community may not be ready to face this situation. Accordingly, instead of boosting confidence, deregulation may increase the anxiety among firms and the accounting profession. This may have resulted in a more secretive accounting practice, and therefore underlies the negative relationship with uncertainty avoidance. This result suggests a residual effect of the previously highly regulated business environments that acts as an impediment to the process of increasing disclosure in external financial reporting.

Low individualism of the Indonesian society is associated with a high secrecy of the Indonesian accounting practice. As discussed earlier, it may be useful to contrast the business firm environment with the general individualism of the society. Firm environments indicate increasing firm individualism. Thus, confined to the view of a business entity's strategic advantage, the above results suggest that an increasing trend of firm individual-

ism is associated with a greater concern to maintain secrecy and protect proprietary information.

The results of the tests of hypotheses show a positive relationship between individualism and the uniformity of accounting practice. However, since individualism as it relates to a business firm environment is opposite to individualism in society at large, the results give supportive evidence for a negative relationship between the individualism of firms environments and the uniformity of accounting practice.

An analysis of the dimensions of accounting practice indicates that the number of accounting changes has the highest loading on the uniformity dimension of accounting practice. In this context, the test results of hypothesis 1C could suggest that as the wealth creation process of the firms increases, complexity occurs and firms tend to apply more new accounting methods to their financial reporting. As the wealth creation process becomes more open, more complexity penetrate firms' operation and reporting practices. The old ways of doing things may not be suitable for an increasing complexity of firms' operation and reporting processes, and changes in these processes become inevitable. In this situation, managers of firms must be able to be creative, innovative, and flexible to adapt to the necessary changes. Changes in accounting methods may signal the creativity and flexibility of firms' managers.

In searching for alternative accounting methods, firms encounter the fact that the accounting profession in Indonesia may not have contemporarily appropriate accounting standards. This leaves firms with different sources of accounting methods from which to choose. The sources of new accounting methods may include, but are not limited to, the international accounting standards and the U.S. accounting standards. Due to the many discrepancies among these choices, the uniformity of accounting practice is likely to decrease.

The results of the tests of hypothesis 2C indicate that in the absence of government regulation, business firms become anxious as to business situations. At the same time, the accounting profession does not seem prepared to pursue an expanded agenda of accounting standard setting. The combined situations can lead to more secretive accounting practices. However, this could lead to an interpretation that firms are mature enough and have enough confidence to accept the risk of reporting under different accounting methods. Less uniform accounting practices are then reflections of this flexibility. Thus, the pressures of uncertainty contribute to managerial discretion in financial reporting. Managers internal needs for new accounting methods that can cope with the increasing complexity of firms' control and financial reporting may be the principal factor affecting the lower uniformity of accounting practice. The development of such needs may not be necessarily associated with the firms' competitive environment. As long as these needs arise and external uniform guidelines for the desired accounting methods are not available, the practice of external financial reporting will vary. It may have little to do with the firms' competitive environment or individualism.

Importantly therefore, this study provides new evidence for the universal role of managerial discretion in the process of accounting choice. Managerial discretion, we assert, exists not only in a traditionally free market environment but characteristically in situations where there is less voluntary disclosure of information about firms, and where government influence mixes with market mechanisms. The presence of managerial discretion complicates the appreciation of cultural influence on accounting. Managerial

discretion emerges from a firm's specific situation, which may or may not represent the general environment that influences the culture of society at large. State enterprises, privately held companies, and publicly held corporations, for instance, may operate in different organizational cultures through which the management decision process is shaped. This further demonstrates that the relationship between culture and accounting is complicated and difficult to generalize.

Masculinity was hypothesized to be negatively related to all accounting values. The results, however, indicate no significant relationships. The findings may lead to an interpretation that accounting practice in Indonesia is still within the domain of the classic male gender type. The involvement of more skilled and educated Indonesian women has not yet imprinted a meaningful alternative gender value. It is also notable that demographically the involvement of women in the accounting community thus far is so minimal that this lack of impact should not be surprising.

The practice of external financial reporting by Indonesian firms seems more adaptive to environmental changes than does the process of Indonesian accounting standard setting. Indonesian firms may prepare their financial reports partly in accordance with U.S. accounting standards, international accounting standards, or accounting standards applied in other nation. Market competition and the reliance of the business community on access to government authority are factors which appear to confirm and distort the hypothesized relationships between cultural values and the dimensions of accounting practice. The reliance of the business community on government authority may have caused the relationships between cultural values and professionalism and secrecy of the Indonesian accounting practice to be the reverse of the conventional directions. Market competition, on the other hand, seems to stimulate the realization of the traditional relationships between cultural values and conservatism of accounting practice.

Market competition and psychological motives provide competing explanations of the relationships between cultural values and the uniformity of accounting practice. Managerial discretion over financial reporting is not necessarily limited by economic reasons identified with firms operating in established competitive capital markets. Managers of firms not operating in such an environment also have political or psychological motives that underlie discretionary reporting practices.

Implications for Future Research

This study questions the extent that a single model of cultural values can be generalized across nations. While the Indonesian case called for the use of the four original dimensions, this is not necessarily true for other nations. Only through the replication of this study in different countries can the generalizability of Hofstede's dimensions of cultural values be determined. It is likely that a varying number of dimensions with important qualitative differences are needed to describe culture in different countries. Although this may erode the straightforward nature of comparative studies, it would increase the confidence that can be placed in this work. Only by having such a country-specific grasp on culture that is validated over periods of time can we determine the usefulness of Hofstede's cultural values in explaining and predicting the development of accounting practice across nations.

Past research has always attempted to use culture as a variable that unproblematically described nations. While this may have some validity for cross-national comparison purposes, the present research shows that variations in culture occur. In that this occurs, the "snap-shots" provided by the culture-accounting literature are of limited value. What we need to invest more heavily in is research designs capable of providing insights into the dynamics of culture as it relates to accounting.

Future study of culture could be extended to include an inquiry into the basic values of all human beings regardless of their race or nationality. Insights into these basic values may supplement the possibly missing dimensions of culture as currently understood by Hofstede and others. This may enable us to have an understanding not only about cultural differences, but also about cultural similarities among nations which in turn would be of value in seeking to harmonize standards for external financial reporting. These insights may also resurrect the study of culture from the possibly Western bias of Hofstede's concept, which tends to equate economic development with cultural progress. As a result, we may also be better equipped to cope with the development of a global culture.

Another research issue related to the study of culture deals with the inquiry into the intra-relationships among the dimensions of culture. The findings of this study suggest several anomalies. It remains unclear, for instance, why the influence of market competition is limited to the relationships between the dimensions of culture and the conservatism of accounting practice. Neither is the influence of market competition on the secrecy of Indonesian accounting practice apparent. An equally unresolved issue is why the reliance on government authority seems to influence only the effects of culture on the professionalism and the secrecy of accounting practice. These issues indicate that Hofstede's model of culture may be too broad to explain and predict the development accounting practice. A well-developed theory of the intra-relationships among the dimensions of culture could elaborate on the specific direct and indirect effects of each cultural value on accounting practice.

Limitations

Despite widespread acceptance, Hofstede's theory is not without imperfections in its measure of the dimensions of culture. For example, Hofstede classifies cultural diffusion by nationality. This classification originates from a premise that shared values are the basis for national existence. If cultural diffusion does not follow the border of nations, ethnic and race criteria may provide more valid ways to delineate cultural differences. The Indonesian population comprises several different ethnic groups with different languages, religions, and customs. The focus on national culture borrowed from the literature may overlook the impact of the different cultures of these ethnic groups on Indonesian accounting practice. However, the reliance of the Indonesian business community on the authority of the government could mollify the impact of these disparate ethnic cultures.

Hofstede's theory of culture also does not address the interaction effects among each dimension of culture. For example, his theory predicts that when more people become better educated, power distance in a society will decrease. It is possible, however, that the decrease in power distance may also be marked by a decrease in uncertainty avoidance. Better education may also enable people to feel confident about themselves and less anx-

ious about uncertainty. In this regard, uncertainty avoidance may decrease whether or not there are government deregulation policies. In Hofstede's model, government deregulation policies are one of the environmental indicators of change in uncertainty avoidance. This possibility suggests that change in uncertainty avoidance may be due to change in power distance. Without these insights, the theory may fail to explain and predict the direct and indirect effects of change in environmental factors on cultural values.

The financial reporting sample used in this study include companies with a wide range of lines of industry, ownership types and organizational structures. However, data availability constraints precluded achieving a random selection of reporting entities. The available sample did not facilitate a separate examination of the relationship between culture and accounting practice by industry classification, ownership type, or organizational structure. Accordingly, this study could not conduct an analysis of the influence of firm specific culture on accounting practice. Organizational structures and management decision processes of state enterprises may differ from those of private enterprises. These differences may cause state and private enterprises to take different courses of action in response to changes in environmental factors. Lacking a wider sample, this study cannot provide such insights.

This study covers a period from 1981 to 1992. During this twelve-year period, Indonesian society underwent a significant transformation process from a predominantly agricultural to a more industrial society. Although this period represents approximately a quarter of the history of this nation, it is relatively short for a study of a society and its culture. The impact of environmental changes on societal life may not be immediately noticeable. A longer transition period may have to elapse before the effects of interactions among the changes in environmental factors, societal norms, and their institutional consequences can be observed.

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The Propensity of Managers to Create Budgetary Slack: A Cross-National Re-examination using Random Sampling

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Key Words: Budgetary Participation, Propensity to Create Budgetary Slack, Slack Detection.

Abstract: *Following a review of the slack literature, Merchant (1985a) proposed that the propensity of subordinate managers to create slack is positively related to the importance placed on meeting budget targets, negatively related to the extent of participation allowed in budgeting processes, negatively related to the degree of predictability in the production processes, and negatively related to their superiors' abilities to detect slack. The results of his empirical tests provided little overall support for these hypotheses. The mixed nature of his results is of some concern since the literature provides considerable support for the theoretical framework underlying his propositions. He concluded that his use of non-random sampling may have influenced the results of his study. The objectives of this paper are first to extend Merchant's (1985a) study using the same measures but employing random sampling in a cross-national setting to enhance result generalizability. Second to assess whether the ability of superiors to detect slack interacts with budgetary participation to affect a subordinate manager's propensity to create slack. The results provide support for the cross-national generalizability of all five hypotheses.*

Although Merchant (1985a) concluded that the propensity to create budgetary slack is a general characteristic of managers, he proposed that this propensity can be influenced both positively and negatively by the manner in which budgeting systems are designed and implemented. In particular, he focused on exploring the ways in which administrative systems of organizations influence the propensity of managers to create slack. Following a review of the slack literature Merchant (1985a) put forward four hypotheses. His results provided little support for two of those propositions, namely, that the propensity of managers to create slack is, first, positively related to the importance placed on meeting budget targets and, second, negatively related to the degree of predictability in production processes. He reported marginal support for a third hypothesis, that budgetary participation and the propensity to create slack are negatively related. He found evidence, however, for a fourth proposition, that the propensity to create slack and the ability of superiors to detect it are negatively associated. Their ability to detect slack, however, did not interact

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with any of the other budgeting variables he examined to affect the slack propensities of subordinates. The mixed nature of his results is of some concern since the literature provides considerable support for the theoretical framework underlying his propositions. In explaining the outcomes of his hypothesis tests, he suggested that the use of non-random sampling could have influenced his findings.

Recently Lindsay (1995) drew attention to the importance of random sampling to significance testing and resulting inferences made from samples to populations. Other researchers have also emphasized the need for random sampling, particularly in relation to survey studies (Fisher, 1947; Kerlinger, 1986; Johnstone, 1987). The achievement of valid empirical generalizations, according to Aldag and Stearns (1988), is dependent on the use of representative samples. Unless random sampling is employed, the literature conclusion is that the results of hypothesis tests and resultant generalizations are at risk (Kendall et al., 1987; Stuart, 1984; Wilson et al., 1973).

The first objective of this paper is to review the slack and methodological literatures and to replicate and extend Merchant's (1985a) study using the same instruments but employing random sampling. This study, conducted in New Zealand, also allowed an empirical assessment to be made of the cross-national generalizability of Merchant's (1985a) arguments. As the literature contains no evidence (Hofstede, 1980) to suggest that the cultural environment in which manufacturing organizations operate in the U.S.A. or New Zealand diverges, cultural differences were not expected to influence the findings of this study. Importantly however, given the continuing globalization of business, Harrison (1992) argued that cross-national assessments of research results provide specific evidence of the generalizability and the transferability of control systems across societal contexts. By addressing both random sampling and cultural setting, empirical support may be provided for Merchant's (1985a) propositions, thereby enhancing the external validity and generalizability of that work (Kerlinger & Pedhazur, 1973). The second aim of the study is to investigate whether the relation between budgetary participation and the propensity of managers to create slack is influenced by the extent to which their superiors have the ability to detect slack. Other exploratory analyses are also conducted.

The remainder of the paper is organized as follows. The next section comprises a review of the literature leading to the formulation of the hypotheses. The method employed in data collection, together with the research instruments used to measure the variables, are reported in the subsequent section. The findings of the study are then presented, followed by the conclusions and limitations of the research.

Literature Review and Hypothesis Development

In conducting his study, Merchant (1985a) used a survey method to examine 19 organizations in the electronics industry. He indicated that the research process started with interviews with senior corporate officials to identify samples of manufacturing managers. The number of potential respondents from each firm ranged from three to 21 depending on the size of the organization and the willingness of the company to devote managerial time to the study. His hypotheses were not industry specific and therefore random sampling would have provided a theoretically supportable research design to test effectively his propositions. Kendall *et al.* (1987) noted that non-random sampling does not allow precise

probability statements to be made of the population and for this reason, random sampling is critical in sampling investigations of populations. Moreover, both Kerlinger (1986) and Johnstone (1987) warned that if samples are not drawn at random, the potential exists for unknown factors to allow the selection of biased samples. Random sampling cannot eliminate bias from each and every sample as Lindsay (1995) indicated, but it can be expected to do so in the long run. The conclusion drawn from this stream of literature is that sampling should be random for valid hypothesis testing and for making inferences from samples to populations.

Hypothesis 1

Merchant (1985a) noted that the effect of the emphasis placed on the use of budgetary control systems on subordinate behavior has been the subject of continued interest in the accounting literature (Hopwood, 1972; Otley, 1978; Hirst, 1981; 1983; Brownell & Hirst, 1986; Harrison, 1993). For example, Onsi (1973) reported a positive relation between managers' needs to create slack and budgetary control systems that placed a heavy reliance on achieving budget targets. Cammann (1976) subsequently examined the effects of different approaches to the use of control systems on subordinate defensive orientations, such as the creation of slack. His results were consistent with those of Onsi (1973), showing that when superiors used budgetary information as a basis for allocating corporate rewards, the responses of their subordinates were defensive. These findings suggest, as Merchant (1985a) proposed, that the propensity to create slack is positively related to the importance placed on meeting budget targets. His results, however, were mixed, reporting a positive relation between the propensity to create slack and reactions to expected budget overruns, and negative associations with both required explanation of variances and the link with extrinsic rewards. His first hypothesis is restated in its null form as follows.

> **H_{01}:** There is no relation between the importance placed on meeting budget targets and the propensity of managers to create budgetary slack.

Hypothesis 2

Merchant (1985a) also proposed, following his literature review, that budgetary participation and the propensity to create slack are likely to be negatively associated. In an early study, Onsi (1973) reported a negative correlation between participation and the propensity to create slack, and concluded that if managers participate actively in budgeting, they have less need to create slack. Cammann (1976) later found in a study of a moderately large utility located in the U.S. northeast that allowing subordinates to participate reduced a range of behaviors including defensiveness and slack creation. In a field study of middle-level managers in seven companies headquartered in the U.S. southwest, however, Collins (1978) did not find a negative correlation between participation and the propensity to create slack. Merchant (1985a), on the other hand, reported only limited support for a negative association between participation and slack. Although these results are somewhat mixed, potentially due to the various sampling procedures adopted, the prospect that the propensity to create slack is negatively related to the extent of participation in budgeting will be re-examined in this study.[1] This hypothesis is stated in its null form as follows.

H_{02}: There is no relation between participation in budgeting and the propensity of managers to create budgetary slack.

Hypothesis 3

Merchant (1985a) argued that in manufacturing departments, the production technology in terms of both process and product used may influence a manager's propensity to create slack. Based on the literature that suggests slack can be used to absorb uncertainty (Cyert & March, 1963; Thompson, 1967; Galbraith, 1973; 1977; Bourgeois, 1981), Merchant (1985a) suggested that slack provides freedom from short-term commitment which can be useful in effectively dealing with a lack of predictability. Consequently, he proposed a negative relation between technological predictability and the propensity to create slack. Although Merchant (1985a) could find no direct evidence, he concluded that it appeared logical to expect that technological predictability could be related systematically to the propensity of managers to create slack.

Since the time of his study, both Hayes *et al.* (1988) and Brownell and Merchant (1990) have argued that developments in manufacturing process automation enhance the degree of control over manufacturing activities by incorporating control mechanisms directly into the manufacturing technology. The degree of predictability associated with those controls would seem to restrict opportunities to create slack. Furthermore, Brownell and Merchant (1990) argued that optimal input/output relations for highly standardized products is either known or can be learned through experience. In contrast low standardization implies difficulty in unambiguously specifying those relations. These arguments provide additional support for Merchant's (1985a) proposition that a manager's propensity to create slack is negatively related to the degree of predictability in production processes. This hypothesis will be retested and is stated in its null form as follows.

H_{03}: There is no relation between the propensity of managers to create budgetary slack and the degree of predictability in production processes.

Hypothesis 4

Merchant (1985a) concluded that the ability of superiors to detect slack may also influence their subordinates' propensities to create slack. Following a review of cognitive dissonance theory (Festinger, 1957; Brehm & Cohen, 1962), balance theory (Heider, 1958), and congruity theory (Osgood & Tannenbaum, 1955), he predicted a negative relation between a superior's ability to detect slack and a subordinate's propensity to create it. Since subordinates cannot create slack when it is easily detected, Merchant (1985a) proposed that subordinates will adjust their propensities to create slack to bring them into equilibrium with their feasible behaviors.

Although superiors may generally be aware that subordinates attempt to introduce slack into their budgets, superiors have only limited success in attempting to reduce that slack (Lowe & Shaw, 1968). The ability of superiors to eliminate slack, Lowe and Shaw (1968) argued, may vary considerably depending upon the extent of their independent knowledge of a situation. For example, Onsi (1973) suggested that slack creation may be hindered by an effective slack detection system. Merchant (1985b) proposed that slack is feasible only

in circumstances in which superiors do not have complete knowledge of what can be achieved in specific subunits or where precise measurement of subordinate performance cannot be made. These arguments suggest that managers' propensities to create slack are likely to be negatively related to the ability of their superiors to detect it. Merchant (1985a) found a negative relation between managers' propensities to create slack and their superiors' ability to detect slack. The proposition will be re-examined in this study, and the hypothesis is stated in its null form as follows.

> **H_{04}:** There is no relation between the propensity of managers to create budgetary slack and the ability of superiors to detect it.

Hypothesis 5—The Interaction of the Ability to Detect Slack and Budgetary Participation to Affect Slack Propensities

Merchant (1985a) found no evidence that the ability of superiors to detect slack influences the extent to which budgetary participation affects managerial propensities to create it. The literature suggests (Lowe & Shaw, 1968; Onsi, 1973), however, that even though participation may reduce a manager's propensity to create budgetary slack, the nature of that association is likely to be dependent on the extent to which superiors have the ability to detect slack in their subordinates' budgets. If their ability to detect slack is high, then it is likely that the negative relation between participation and the propensity for slack creation will be greater than if their ability to detect slack is low. This proposition will be tested as the fifth hypothesis, and is stated in its null form as follows. Evidence supporting the rejection of this null hypothesis would also indicate that the bivariate relation expressed in hypothesis 2 does not hold across all levels of slack detection.

> **H_{05}:** There is no interaction between budgetary participation and the ability to detect slack affecting the propensity of managers to create budgetary slack.

Method

Sampling

A random sample of 121 manufacturing companies was drawn from *The New Zealand Business Who's Who* business directory. This allowed each of the listed firms an equal chance of being selected to ensure as far as possible that the sample was representative of the population of manufacturing organizations (Kerlinger, 1986; Rosenthal & Rosnow, 1991). Therefore, this sampling design has theoretical support to test effectively the propositions addressed in this study.

A focus on manufacturing organizations ensured that all five hypotheses could be assessed. Telephone contact was made with the production managers of these firms to gain their cooperation in contributing to the study. This procedure also enabled targeted managers to be identified correctly, thereby providing additional control over the subsequent data gathering, as well as assisting in enhancing the response rate.

The questionnaire was pretested using faculty and manufacturing managers from two companies. No difficulties were identified with the questionnaire as a result of this procedure. The questionnaire together with a cover letter and a self-addressed return envelope was then mailed to each manager in the sample. A single telephone follow-up was conducted. Responses were received from 83 managers, a response rate of 69 percent. The mean age of these managers was 39 years, they had worked in their current positions on average for six years and for their companies for ten years. Managers represented companies manufacturing a wide range of consumer and industrial products.

Variable Measurement

Budgetary Participation

Budgetary participation was measured in the same way as Merchant (1985a) using two scales Merchant (1981) derived. These were *influence on budget plans*, comprising two five-point Likert-scaled items, and *personal involvement in budgeting*, consisting of three five-point Likert-scaled items. The positive correlation between the two items of the *influence on budget plans* measure ($r = 0.57, p = < 0.001$) allowed their scores to be aggregated to provide the overall score for the instrument (Brownell, 1985).[2] For *personal involvement in budgeting*, the Cronbach alpha (Cronbach, 1951) of 0.77 suggests that the internal consistency of the measure is high. The results of a factor analysis revealed that the three items loaded on a single factor with an eigenvalue of 1.74, explaining 58 percent of the variance in the underlying variable. Table 1 contains descriptive statistics for the measures.

Slack Detection

Slack detection was measured using the three item five-point Likert-scaled instrument developed by Onsi (1973) and used by Merchant (1985a). An internal consistency analysis provided a Cronbach alpha of 0.76. A factor analysis identified a single factor solution with an eigenvalue of 1.68, explaining 56 percent of the variance in the underlying variable. Descriptive statistics for the instrument are contained in table 1.

Technology

Consistent with Merchant (1985a), two measures of technology were used in the study. The first is the Inkson *et al.* (1970) *workflow integration* measure. This instrument requires respondents to indicate, on two zero to five scales, the degree of automation of the bulk of their production equipment, and the class their most automated equipment falls within, ranging from handtools and manual machines to self-measuring and computer controlled equipment. The scale scores are summed to derive an overall score for the measure (Price, 1972). The positive correlation ($r = 0.464, p < 0.001$) between the two scales provides the support to allow them to be added (Brownell, 1985). The second was the measure of *product standardization* proposed by Thompson (1967) and used by Merchant (1985a). Products were classified on a five-point Likert scale anchored by (1) products

custom made and (5) products completely standardized. Descriptive statistics for the measures are presented in Table 1.

Propensity to Create Slack

A manager's propensity to create budgetary slack was measured using the Onsi (1973) four-item Likert-scaled instrument, also employed by Merchant (1985a). The Cronbach alpha for the scale was 0.74, which suggests that its internal consistency is relatively high. Govindarajan (1986) similarly obtained a Cronbach alpha of 0.74 for the measure. A factor analysis revealed a single factor solution, having an eigenvalue of 1.70 and explaining 43 percent of the variance in the underlying variable. Table 1 presents descriptive statistics for the measure.

Importance of Meeting the Budget

The three scales used by Merchant (1985a) to measure the importance of meeting the budget were employed in this study. The first, *required explanation of variances*, comprises four five-point Likert-scaled items. The Cronbach alpha for the scale of 0.86 provided support for its internal consistency. A factor analysis resulted in a single factor solution, with an eigenvalue of 2.53 and explaining 63 percent of the variance in the underlying variable. The second instrument, *reactions to expected budget overruns*, is a three item five-point Likert-scaled measure. Its internal consistency score of 0.54 as measured by Cronbach alpha was relatively low, although within acceptable limits (Nunnally, 1967). The items loaded on a single factor having an eigenvalue of 1.23, and explaining 41 percent of the variance in the underlying variable. To measure a budget's *link with extrinsic rewards*, a modified four item five-point Likert-scaled instrument developed by Hackman and Porter (1968), and subsequently used by Dermer (1975) and Merchant (1985a), was used. The Cronbach alpha for the scale was 0.83, which indicates that its internal consistency is high. A factor analysis revealed a single factor structure with an eigenvalue of

Table 1. Descriptive Statistics of the Variables in the Study

Variable	*n*	*Mean*	*Std Devn*	*Theoretical Range*		*Actual Range*	
				Min	*Max*	*Min*	*Max*
Participation							
Influence on budget plans	83	7.747	2.029	2	10	2	10
Personal involvement in budgeting	83	12.096	2.766	3	15	3	15
Slack detection	83	11.855	2.764	3	15	3	15
Technology							
Workflow integration	83	6.735	2.410	2	10	2	10
Product standardization	83	3.373	1.403	1	5	1	5
Propensity to create slack	83	9.060	3.637	4	20	4	20
Importance of meeting budget							
Required explanation of variances	83	14.036	4.967	4	20	4	20
Reactions to expected budget overruns	83	6.602	2.854	3	15	3	15
Link with extrinsic rewards	83	12.494	4.346	4	20	4	20

2.25, explaining 56 percent of the variance in the underlying variable. Table 1 provides descriptive statistics for the three instruments.

Results

The results of testing hypotheses 1 to 4 are presented in Table 2. The findings suggest that there is substantial support for hypothesis 1 that the propensity to create budgetary slack is positively related to the importance placed on meeting budget targets. The correlation between slack propensity and each of the three reliance measures is significant and positive at $p \leq 0.005$. Consequently, these results are consistent with the literature and in particular, with Merchant's (1985a) expectations.

Clear support was also obtained for hypothesis 2 that the propensity to create slack is inversely related to participation. The findings in Table 2 indicate that influence on budget plans is negatively associated with slack ($r = -0.218$, $p = 0.025$) as is personal involvement in budgeting ($r = -0.284$, $p = 0.005$).

The results also support hypothesis 3 that the propensity to create slack is negatively associated with the predictability of the production processes. Table 2 illustrates that both workflow integration and product standardization are negatively related to managers' slack propensities. The findings also provide support for hypothesis 4 that the ability of superiors to detect slack is negatively related with the propensity of subordinates to create it ($r = -0.30$, $p < 0.005$). In summary, the results of testing hypotheses 1 to 4 are consistent with Merchant's (1985a) theoretical expectations.

Hypothesis 5—Testing for an Interaction Between Participation and Slack Detection

The following model was used to test if participation interacts with slack detection to affect a manager's propensity to create slack.

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_1X_2 + e \qquad (1)$$

Table 2. Results of Testing Hypotheses 1 to 4

Correlation of propensity to create budgetary slack with:	*r*	*p**
Hypothesis 1: Importance of meeting budget		
Required explanation of variances	0.351	< 0.005
Reactions to expected budget overruns	0.412	< 0.001
Link with extrinsic rewards	0.369	< 0.001
Hypothesis 2: Participation		
Influence on budget plans	–0.218	0.025
Personal involvement in budgeting	–0.284	0.005
Hypothesis 3: Technology		
Workflow integration	–0.363	< 0.001
Product standardization	–0.208	0.035
Hypothesis 4: Ability to detect slack		
Slack detection	–0.300	< 0.005

Note: *one-tailed significance

where Y is the propensity to create budgetary slack
X_1 is budgetary participation (i) influence on budget plans; (ii) personal involvement in budgeting
X_2 is slack detection

The interaction between participation and slack detection affecting the propensity of managers to create slack was tested by examining the significance of the coefficient of the interaction term, b_3. Since participation is measured by two instruments, two separate two-way regression analyses were conducted. Panel A of Table 3 presents the results of testing hypothesis 5 in which X_1 is influence on budget plans. Since b_3 is significant ($t = -2.16$, $p = 0.034$), the finding supports the rejection of the null hypothesis.

Although the results in Panel A suggest that influence on budget plans and slack detection interact to affect the propensity of managers to create slack, they do not provide evidence of the nature of the interaction. As a means of examining the nature of the interaction, slack detection was dichotomized at the mean. Scores below the mean were coded as low (zero), whereas scores above the mean were coded as high (one). Two further regression analyses were then conducted in which slack propensity was regressed on influence on budget plans first for low slack detection, and second, for high slack detection. The finding presented in Panel B of Table 3 suggests that when slack detection is

Table 3. Results of Testing Hypoethesis 5 in which X1 is the Influence on Budget Plans

Panel A: Results of Interaction Hypothesis Test
Part 1: Influence on Budget Plans

Variable	*Coefficient*	*Value*	*Std Error*	*t*	*p*
Constant	b_0	6.0600	4.0860	1.48	0.142
Influence on budget plans	b_1	1.1617	0.6318	1.84	0.070
Slack detection	b_2	0.3990	0.3847	1.04	0.303
Influence on budget plans *x* slack detection	b_3	–0.1128	0.0521	-2.16	0.034
	$R^2 = 0.143$	$F_{3,79} = 4.40$, $p = 0.006$			

Panel B: Regression of Slack on Influence on Budget Plans
Slack Detection Low

Variable	*Coefficient*	*Value*	*Std Error*	*t*	*p*
Constant	b_0	8.5220	2.2040	3.87	0.001
Influence on budget plans	b_1	0.2138	0.3188	0.67	0.508
		$R^2 = 0.016$ n = 30			

Panel C: Regression of Slack on Influence on Budget Plans
Slack Detection High

Variable	*Coefficient*	*Value*	*Std Error*	*t*	*p*
Constant	b_0	14.8850	2.4020	6.20	0.001
Influence on budget plans	b_1	–0.7525	0.2806	–2.68	0.010
		$R^2 = 0.016$ n = 30			

low, influence on budget plans does not affect the propensity of managers to create slack ($t = 0.67$, $p = 0.508$). By contrast, when slack detection is high (Panel C), the results suggest that influence on budget plans negatively affects the propensity to create slack ($t = -2.68$, $p = 0.010$).

Panel A of Table 4 provides the results of testing hypothesis 5 substituting personal involvement in budgeting for X_1. In this regression b_3 is also significant ($t = -2.22$, $p = 0.029$), allowing the rejection of the null hypothesis.[3]

To facilitate the analysis of the nature of this interaction, slack detection was also dichotomized at the mean using the same coding procedure as with influence on budget plans. The results presented in Panels B and C of Table 4 are consistent with those for the participation variable in table 3; when slack detection was low, personal involvement in budgeting did not affect the propensity to create slack. When slack detection was high, however, personal involvement in budgeting negatively influenced that propensity.

Given the interaction between both influence on budget plans and personal involvement in budgeting and slack detection affecting the propensity to create slack, the results support the proposition that participation is more effective in reducing a manager's propensity to create slack when slack detection is high, in contrast to when it is low. The results indicate that the relation between participation and slack is negative only when slack detection is high. The absence of an association between participation and slack when the ability of

Table 4. Results of Testing Hypothesis 5 Substituting Personal Involvement in Budgeting for X_1

Panel A: Results of Interaction Hypothesis Test
Part 2: Personal Involvement in Budgeting

Variable	*Coefficient*	*Value*	*Std Error*	*t*	*p*
Constant	b_0	6.0740	4.1430	1.47	0.147
Personal involvement in budgeting	b_1	0.6412	0.4218	1.52	0.132
Slack detection	b_2	0.5678	0.4235	1.34	0.184
Personal involvement in budgeting x slack detection	b_3	–0.0772	0.0348	–2.22	0.029

$R^2 = 0.152$ $F_{3,79} = 4.72$, $p = 0.004$

Panel B: Regression of Slack on Personal Involvement in Budgeting
Slack Detection Low

Variable	*Coefficient*	*Value*	*Std Error*	*t*	*p*
Constant	b_0	9.5330	2.6220	3.64	0.001
Personal involvement in budgeting	b_1	0.0395	0.2503	0.16	0.876

$R^2 = 0.001$ $n = 30$

Panel C: Regression of Slack on Personal Involvement in Budgeting
Slack Detection High

Variable	*Coefficient*	*Value*	*Std Error*	*t*	*p*
Constant	b_0	17.6170	2.9060	6.06	0.001
Personal involvement in budgeting	b_1	–0.6853	0.2173	–3.15	0.003

$R^2 = 0.163$ $n = 53$

superiors to detect slack is low suggests that subordinates' propensities for slack creation are not triggered by their participation.

Further exploratory analyses were performed to investigate whether technology and importance of meeting budget influence the relation between participation and slack. The results indicate that technology, as measured by workflow integration and product standardization does not ($t = 0.46$, $p = 0.649$; $t = -0.06$, $p = 0.952$ respectively for influence on budget plans and $t = 0.23$, $p = 0.819$; $t = -0.4$ $p = 0.681$, respectively for personal involvement in budgeting). The findings from examining for the possible effects of the three importance of meeting budget variables also provided no evidence of a moderating effect, consistent with Merchant (1985a).

CONCLUSION

The results of the study provide clear support for the propositions presented in this paper. The findings for hypotheses 1 to 4 suggest that the propensity to create slack is influenced by the importance of meeting the budget, the degree of participation allowed, the level of technology employed and the ability of superiors to detect slack. As such, the results are consistent with Merchant's (1985a) literature-based expectations. Although there is no unequivocal evidence to suggest that random sampling is the factor that enabled the results of this study to be consistent with those expectations, there is a strong theoretical basis for employing random sampling in hypothesis testing. This may suggest that Merchant's (1985a) results using a sample of electronics firms do not generalize to the population of manufacturing firms. The findings presented in this study nevertheless provide empirical support for the cross-national generalizability of Merchant's (1985a) propositions.

The results of testing hypothesis 5 suggest that the zero-order relation between participation and the propensity to create slack decomposes when the moderating effect of the ability of superiors to detect slack is considered. Although the correlation between the participation variables and slack is negative, the findings indicate that it only holds when slack detection is high. Importantly however, when slack detection is low, the results of the study suggest that managers' participation in budget setting does not enhance their propensity to create slack. Consequently, the bivariate findings from testing hypothesis 2 do not generalize across all levels of slack detection. Overall, the findings of this study suggest, consistent with Onsi (1973) and Cammann (1976), that managerial control systems which use participative budgeting are effective in managing slack propensities.

The results also provide some evidence that slack may be better controlled if the ability of superiors to detect it is improved. This may be achieved, as Merchant (1985a) proposed, by investing in more effective information systems. Another strategy may be to assess the nature and the effects of task uncertainty as a means of analysing tasks to develop a better understanding of resource requirements.

Despite careful attention to research design, the results of the study are subject to a number of potential limitations. First, data were drawn only from manufacturing firms, although the testing of hypothesis 3 required a production environment. Second, even though the theory argues for directional relations with regard to hypothesis 5, no statement of causation can be made since the study is contemporaneous and cross-sectionally based.

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NOTES

1. The proposition is that participation by subordinates in the budget setting process reduces their propensity to create slack. In contrast, little participation may enhance it. Although participation may be a necessary condition for subordinates to build slack into budgets, it is unlikely to be a sufficient condition. Little participation is argued to enhance their propensity to do so, which subordinates may through various means attempt to introduce slack.
2. Since there are only two items in the instrument, there was little to be gained from calculating a Cronbach alpha.
3. To evaluate whether the results of the hypothesis test contravened the assumptions of regression analysis (Neter *et al.*, 1985), the homogeneity of variance of the residuals, the appropriateness of a linear model, and the normality of the residuals were assessed. The standardized residuals were plotted against the fitted dependent variable and there was no evidence that the assumption of homoscedasticity had been violated. Plots of the residuals against each of the predictors indicated that the data points fell within a horizontal band of uniform width about a zero mid-point, suggesting that a linear relation represented the effects of each predictor. The normality of residuals was tested by plotting them against their normal scores. The points in the plot appeared in a straight line; evidencing no departure from normality. The positive correlations between the standardized residuals and the normal scores ($r = 0.982$, $p < 0.001$ for influence on budget plans; $r = 0.904$, $p < 0.001$ for personal involvement in budgeting) provided additional support for the normality of the residuals in each of the models (Ryan et al., 1982).

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Determinants of Audit Fees in Bangladesh

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Key Words: Bangladesh, Audit fees

Abstract: *This paper reports the results of an analysis of the determinants of audit fees of both financial and non-financial companies in Bangladesh. The Bangladeshi audit services market is unusual in that there is no direct involvement of international audit firms in it. The results of the regressions show that the size of the auditee has the greatest influence on audit fees. Whilst there was no international Big Six grouping, it was possible to construct a group of Bangladeshi audit firms which commanded a price premium, based on their size and whether they had a link with an international firm of auditors. Financial services companies were found to have higher audit fees relative to non-financial companies. Subsidiaries of multi-national holding companies also had higher audit fees. The surprising result was that auditees which employed at least one qualified accountant had higher audit fees.*

I. INTRODUCTION

The market for audit services and its pricing has attracted considerable attention in the developed world and summaries can be found in Yardley et al (1992) and Chan et al (1993). However, little work has been done in developing countries on issues, such as: auditor independence, audit quality, audit delays, and audit fee determinants. The aim of this paper is to help redress this imbalance by analyzing the determinants of audit fees in Bangladesh.

The analysis involves creating a regression model to explain the level of audit fees in a sample of 157 companies operating in Bangladesh. The remainder of the paper is organized as follows. The next section outlines the nature of the audit services market in Bangladesh. Section III provides the theoretical framework and describes the independent variables to be tested. Section IV details the regressions, how the sample was selected and how the analysis was performed. Section V discusses of the regressions and Section VI concludes the paper.

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II. THE NATURE OF AUDIT SERVICES MARKET IN BANGLADESH

A number of regulatory rulings in Bangladesh require companies to have their accounts audited by a chartered accountant, including the Companies Act 1913, the Income Tax Act 1922, the Insurance Act 1938, the Nationalisation Orders of 1972 and 1973, the Income Tax Ordinance 1984, the Securities and Exchange Rules 1987 and the Banking Companies Ordinance 1991. As a result, all companies registered in Bangladesh are statutorily required to be audited every year by a chartered accountant. To perform this audit function, there were on 1 July 1992, 150 audit firms of which 117 were sole proprietorship firms and the remaining 33 were partnership firms. On 1 July 1992 a total of 231 chartered accountants were employed in these audit firms as owners or partners or qualified assistants. The highest number of chartered accountants (nine) worked in Rahman Rahman Haq & Co.

At present, none of the international Big Six has an office in Bangladesh although they do in India, Pakistan, and Sri Lanka. However, six Bangladeshi audit firms have links with international audit firms and these links are shown in Table 1.

The subsidiaries of multinationals are usually audited by firms having links with the Big Six. In most cases, the parent company recommends an audit firm that has links with the parent's auditor. For instance, Pfizer (Bangladesh) Ltd. is audited by SF Ahmed and Co. on the grounds that it has links with Pfizer's international auditor Ernst and Young. Similarly, GEC (Bangladesh) Ltd. uses the audit firm of Hoda Vasi Chowdhury and Co., which has links with DRT International.

The demand for audit work has grown quickly as a result of the formation of thousands of private companies in the manufacturing and the services sectors. One example is the large increase in companies in the ready made garments industry. This sector was virtually non-existent before 1975. At present, there are approximately 300 garments companies in Bangladesh and all of them require an annual audit for tax and loan purposes. A similar increase in demand for audit services has been created by the rapid growth in the textile, sea food, and leather sectors. In addition, denationalization has created more companies requiring an audit, particularly in the banking and insurance sectors.

The market for audit services is no longer limited to companies and nationalised industries, as there is also a demand for audit services from Non-Government Organisations (NGOs). In the last decade, there has been an influx of foreign aid in the aftermath of the devastating floods of 1987 and 1988 and the cyclone of 1991. Most donors such as CARE, SIDA, CIDA, OXFAM, Action Aid, and MCC, now prefer to channel their aid through NGOs following the reports of large scale misappropriations of aid by government agencies.

Table 1. International Links of Bangladesh Audit Firms

Name of the firm	*International firm*
Rahman Rahman Haq and Co	KPMG and Price Waterhouse
Hoda Vasi Chowdhury and Co.	Deloitte Touche Tohmatsu
S F Ahmed and Co.	Ernst and Young
Howlader Younus and Co.	Ernst and Young
A Quasem and Co.	Coopers and Lybrand
M J Abedin and Co.	Moore Stephen

Anecdotal evidence from interviews undertaken by the researchers with stockbrokers and auditors indicates that the audit services market is perceived to be a buyers market, with company management enjoying strong bargaining power over the appointment of an auditor. As a result, audit firms are seen as being subservient to the wishes of company management. Not surprisingly in such a market, audit fees in Bangladesh are low. The companies included in the current study are the biggest ones and pay the largest audit fees, but even in this large company sample, the average audit fee paid is only Tk. 55,791 (approx. $1,400). The smallest audit fee paid in the sample is Tk. 2500 (approx. $60) and the largest is Tk. 608,000 (approx. $15,200). Nevertheless, it was revealed in discussions with managers of Beximco Pharmaceuticals and four other companies of the Beximco group that they would pay higher audit fees for more credible audit work if it were conducted by an office of one of the international Big Six audit firms. In their opinion, this would add not only more credibility to their financial statements but also buy prestige for them. The need to employ auditors with international repute and credibility is growing, because of the increasing number of foreign investors who have started investing in the securities of Bangladeshi companies. For example, the Hong Kong based company, Smith New Court (Far East), has invested heavily in the equity and in the debentures of companies such as Beximco Pharmaceuticals, Beximco Infusions, and Bengal Food.

III. THEORETICAL FRAMEWORK

Auditee Size

The most consistent result in all previous research has been that auditee size is by far the most significant explanatory variable in determining audit fees (Chan *et al*, 1993; p. 766). The majority of previous studies have used total assets as the size measure. Chan *et al* (1993) argued that if audit firms adopt a balance sheet based approach then total assets may be the most suitable measure but, if they adopt a transaction based approach to the audit, turnover may be a better explanatory variable (p. 766). Economies of scale in the auditor's production function and the likelihood that larger companies will have more sophisticated internal control procedures have suggested that the relationship between auditee size and audit fee is unlikely to be linear. Accordingly, the size measure is transformed in many studies either into its square root or natural log. In Bangladesh, balance sheet audits tend to be the norm, because internal control systems are still in their infancy and so the log of total assets was used in the model. This variable was labelled LOGASSET.

Auditee Complexity

The amount of audit effort expended can be expected to increase with the increased complexity of the audit task, which in turn is likely to lead to increased audit fees. Complexity costs will be a reflection of the nature of the business of the auditee, its location, the quality of its internal control and the proportion of unusual transactions. Auditee complexity has been used in a number of studies. The measures that have been used include number of branches, number of subsidiaries, location of subsidiaries (e.g., proportion of foreign subsidiaries), number of industries in which the client operates, ratio of inventory to total

assets and ratio of receivables to total assets and diversification of activities of the auditee (Simunic, 1980; Chan *et al,* 1993). The nature of business in Bangladesh means that most companies do not have the complexity found in developed countries and so most of the previously used variables had little justification. Only one measure of auditee complexity was used: the proportion of assets in the form of inventory and receivables. This variable could be used only for non-financial companies and the variable was labelled COMPLEX.

Auditee Risk

The great majority of audit firms in the developed world base their audit approach on some form of audit risk model in which the planned extent and scope of audit testing are determined by the perceived risk of audit failure. Chan et al (1993) found that audit risk was a significant factor in determining the extent of necessary audit work and in consequence in determining the amount of audit fee to be charged. Companies making accounting losses can be expected to represent a higher risk, because of the implied lack of cash flow and so the variable LOSS was used, coded one if the company had an accumulated loss and zero otherwise. The higher the gearing of the company, the higher is its potential bankruptcy risk and so leverage was also used in the present study as a measure of auditee risk. The variable LEVERAGE was defined as the ratio of debt to total equity and was used in the non-financial company sample.

Auditee Profitability

The effect of auditee profitability is hard to assess, because there are two possible opposite effects. Greater profitability could mean that the company is less concerned with individual overheads and hence the audit fee could be higher. Alternatively, low profitability could be associated with financial pressure, which would require increased audit work to verify the value of assets and to confirm that the company was a going concern. Hence low profitability could also be associated with higher fees. In the present study, auditee profitability was measured by the ratio of net profit to sales and was called NPTOSALE.

Government Ownership

In audit fee studies in developed countries, the extent to which owners control the company has been used as a determinant of audit fees. The theoretical justification comes from the proposition of agency theory that the propensity of investors to demand timely and independent audits is a function of the extent of the divorce between ownership and control. Hence it is argued that the extent of audit services demanded will be a function of the ownership structure of a company, with companies with a diverse ownership structures requiring a more extensive and higher quality audit over and above that necessary to fulfil the minimum statutory requirements. In developing countries, the main influence on ownership structure is the extent of government ownership. Companies wholly owned by governments have been criticised for not being audited in depth (see for example, Parry, 1989). The argument is that, as they have no outside shareholders except the government, there is little pressure for higher quality audits. However, no audit fee study appears to

have examined this variable because samples in earlier studies did not include any companies owned by the government. It is expected that companies with higher percentages of government ownership will pay significantly lower amounts of audit fees than companies owned by the private sector. The percentage of government ownership was, therefore, used as an explanatory variable in the model and was labelled GOVTOWN.

Date of Year End

Chan *et al* (1993) differentiated between audit work performed during the "busy season" and the "non-busy season." The argument was that audit firms would attempt to smooth out the peaks and troughs in their workloads by charging a premium fee in the busy season. In Bangladesh, the busy period occurs after June, because the government's budget year and the tax department's financial year also finish at the end of June. Consequently, in the present study, companies with accounting periods ending in June were considered to be busy season clients and it was expected that they would pay a premium. A dummy variable labelled YEAREND was created, coded one if the year end was June and zero otherwise.

Auditor Size and International Link

A significant focus of attention of Western audit fee studies has been on whether the Big Six (Eight) are able to charge a premium over other audit firms. The argument is that the Big Six have access to higher quality staff and use higher quality procedures and so are more likely to detect errors and omissions. In addition, because of their size, they are better able to withstand pressure from client company management and so are more likely to act in an independent fashion. Simunic (1980) found no evidence of significantly higher audit fees charged by the Big Eight firms in the US except Price Waterhouse, regardless of the auditee size. Firth (1985) also reported no significant influence of auditor size in New Zealand. However, other studies including Taffler and Ramalinggam (1982), Francis (1984), Palmrose (1986), Francis and Stokes (1986) and Francis and Simon (1987) found the existence of a Big Eight premium. In the present study, it was difficult to partition the audit firms in the absence of a recognised Big and non-Big firms category. A reasonable partition was to call large, those audit firms employing four or more chartered accountants (including partners). There were eight such firms. In addition, from the available information, it was possible to identify the international link of the audit firms, mostly with the Big Six. Consequently, two criteria were used to identify big and non-big audit firms. Firms with four or more chartered accountants and with an international link were classed as big, producing five big audit firms in the context of Bangladesh. Thus the size and international link were used as the surrogate for audit firm size and hence audit quality. The variable was labelled BIG 5.

Employment of Qualified Accountant(s)

The audit fee models formulated in developed country studies did not examine the impact of the qualification of the company's chief accountant or other members of the

accounting staff, presumably because companies normally employ qualified accountants in senior accounting positions. However, in developing countries many stock exchange listed companies are run by unqualified accountants. It is possible to argue that companies with qualified accountants are likely to have better internal control systems and also to produce accounts containing fewer errors than companies with only unqualified accountants. Hence, it would be expected that companies with qualified accountants would pay a lower audit fee. Accordingly, a dummy variable was used with the value of one if a qualified accountant was employed and zero otherwise. The variable was called ACCOUNTT.

Active Trading

It would be expected from agency theory, that those companies whose shares were being regularly traded would have higher quality audits as an assurance to prospective investors that the information contained in the audited financial statements was reliable. In Bangladesh, some companies which are listed on the stock exchange are not traded and so have more of the characteristics of a private company. Accordingly a dummy variable labelled TRADED was created with a value of one for companies whose market capitalization figure was available from the stock exchange publications and zero for companies whose market capitalization was not available.

Multinationality

Subsidiaries of multinational companies tend to observe higher accounting standards and disclose more information than their domestic counterparts (Ahmed & Nicholls, 1994). Accordingly, these should lead to higher quality audit work which, in turn, requires higher audit fees. In the current sample, all the MNC subsidiaries are clients of the Big audit firms and pay higher than average audit fees. A dichotomous variable called MNC-SUBSI was used with the value of one if the company was a subsidiary of a multi-national parent and zero otherwise.

Financial or Non-financial Company

Audits of financial companies (banks, insurance companies and investment companies) are different in nature from those of non-financial companies, principally because they present different audit challenges. Financial companies typically have rather simpler asset structures, as they do not hold stock and are likely to have much less plant and equipment than a manufacturing company. On the other hand, financial companies tend to have more offices and hence have more elements requiring an audit. Given the above conflicting predictions, it is difficult to forecast whether financial companies will have higher or lower audit fees. A dummy variable, labelled FINANCE was used with the value of one if the company belonged to the financial sector and zero otherwise.

Language of Annual Report

In Bangladesh, both English and Bengali languages are used. The language in which the annual report is prepared may have some impact on audit fee levels because many compa-

nies publish annual reports in English which may require additional work on the part of the auditor. The opposite may also be the case because, generally, companies keep their books of accounts in English rather than in Bengali. Verification of transactions may therefore be easier if the financial statements are also prepared in English and in addition the audit team may find English easier to use. Hence, a dummy variable, called ENGLISH was introduced to see if it has any bearing on audit fees and if so, in what direction. The variable was coded one if English was used for some part of the annual report and zero otherwise.

Number of Languages Used in the Annual Report

The number of languages used in the annual report is also likely to influence the level of audit fees because, it invariably increases audit work. The usual practice in Bangladesh is that the auditors prepare the financial statements contained in the annual report. The use of both Bengali and English in the annual report may increase the cost of audit and may subsequently induce audit firms to charge higher audit fees. Companies with two languages in any part of the annual report were categorised as using multiple languages and companies with only either English or Bengali were treated as using one language. A dummy variable was used with the value of one if two languages were used and zero if only one language was used. The variable was labelled MULTIPLE.

IV. SAMPLE SELECTION AND ANALYSIS

The sample comprised all 121 companies listed on the Dhaka Stock Exchange (DSE) as at December 1992 which published annual reports for the year ending June 1991 or December 1991. In addition, 36 unlisted companies were included of which 17 were public enterprises (wholly government owned). Firm-specific data were collected from the published annual reports. Two models were tested using: (i) all the companies in the sample and (ii) only non-financial companies to examine the possible effect of gearing and audit complexity on audit fee levels. The gearing ratios for banks and insurance companies were not used, because they have a different significance for financial companies compared to non-financial companies. As indicated above, the measure of audit complexity (i.e., the proportion of assets in receivables and inventories held by non-financial companies) is not comparable to similar categories in financial companies and so the audit complexity variable was not calculated for financial companies. Accordingly the leverage and audit complexity variables were used only in the second model based on non-financial companies.

The multiple linear regression technique was used to examine the association between the levels of audit fees and the corporate attributes detailed in Section III. Two models were run: Model 1—the combined sample consisting of financial and non-financial companies and Model 2—the sample of non-financial companies alone. In both models, the dependent variable was the log of the audit fees paid. The variable was not normally distributed in its crude form and so, in order to ensure the normality of the distribution, a log transformation was performed and the natural log of audit fees (LOGADTFE) used as the dependent variable. The independent explanatory variables are shown in Table 2.

Table 2. Summary of Explanatory Variables

Variable Label	*Variable*	*Expected sign*
TRADED	Actively traded in the stock exchange	+
BIG 5	Large audit firm with international links	+
LOGASSET	Natural log of total assets (in million)	+
NPTOSALE	Net profit to sales ratio	?
GOVTOWN	Percentage of government ownership	-
MNCSUBSI	Subsidiary of a multinational company	+
ACCOUNTT	Qualified accountant employed	?
ENGLISH	English used in the annual report	?
YEAREND	June accounting year end	-
MULTIPLE	Multiple languages used in the annual report	+
LOSS	Accumulated loss	+
FINANCIAL	Financial sector company (only in Model 1)	?
LEVERAGE	Debt to equity ratio (only in Model 2)	+
COMPLEX	Audit complexity (only in Model 2)	+

Model 1 (the combined sample) and Model 2 (the non-financial company sample) differed only in the use of the variable FINANCIAL in Model 1 (to distinguish between financial and non-financial companies) and in the use of the variables COMPLEX and LEVERAGE in Model 2.

V. RESULTS

Preliminary Results

The first step towards the development of the proposed model was the construction of a correlation matrix of all the variables likely to be used as explanatory variables and the dependent variable. Table 3 provides the correlation matrix which is used to select the variables for the proposed models.

Multivariate Results

An OLS regression procedure was followed to examine the models. The results of the regression procedures are summarized in Tables 4 and 5.

The results of the combined model have an explanatory power (R^2 = 0.62) which is a slightly lower than previous studies which have typically ranged from 0.70 to 0.89 (Chan et al, 1993, p. 773). However, these models did not include financial companies and it may be that their audit fees have different structures not entirely captured in the financial variable. It is also important to note that Bangladeshi companies are small when compared with Western companies and so a more relevant comparison would be with small company samples, which typically produce lower R-squareds. For example, Chan et al (1993) report an R^2 = 0.62 for their small auditee sample of 139 companies, which is much more comparable. The non-financial auditee regression produced an R^2 = 0.56 which is lower, but the sample size was also reduced.

The two models were tested for multicollinearity, heteroskedasticity, and stability. To detect if there was any multicollinearity, the ratio of rij/Ry was calculated for all pairs of

Table 3. Correlation Matrix

	accountt	*Big 5*	*complex*	*financial*	*govtown*	*English*	*leverage*	*logadtfe*	*logasset*	*traded*	*mncsubi*	*multiple*	*nptosale*	*loss*	*yearend*
account	1.0000														
Big 5	.2124	1.0000													
complex	.1204	.0457	1.0000												
financial	.2143	.0886	.0557	1.0000											
govtown	.1945	.1097	–/0639	.1594	1.0000										
English	.2256	.1313	–.0403	.1580	–.1279	1.0000									
leverage	–.0091	–.0668	.3035	.1276	–.0801	–.2220	1.0000								
logadfe	.4574	.3390	.0325	.4644	.4503	.1019	–.0625	1.0000							
logasset	.2762	.1064	–.1092	.3733	.6550	–.0012	–.0069	.6904	1.0000						
traded	–.2154	.0131	.0905	–.3353	–.2254	–.2390	.0117	–.2055	–.1316	1.0000					
mncsubsi	.2541	.4051	.2698	–.0988	.1580	.1550	–.1483	.2379	.1005	.0371	1.0000				
multiple	.1447	.0065	.0333	.1204	.0164	.3735	–.1969	.1214	.1516	.1039	.0372	1.0000			
nptosale	.1750	–.0623	–.0443	.3352	.0005	.1071	–.2269	.1412	–.0641	–.0840	–.0266	–.0156	1.0000		
loss	–.1275	–.0051	–.0811	–.1432	–.0590	–.0618	.1589	–.0742	.4820	.1488	.4530	.2026	.1914	1.0000	
yearend	–.2026	–.3352	–.0424	–.3849	.1040	–.2075	.1233	–.2319	.0295	–.0534	.2128	–.1251	–.1189	.0399	1.0000

Table 4. Summary of the regression output for Model 1 (the combined sample)

Coefficient of multiple regression	.80640
Coefficient of determination (R Square)	.65029
Adjusted R Square	.62135
Standard Error	.26711

Analysis of Variance

	D.F.	Sum of Squares	Mean Squares
Regressio n	12	19.23756	1.60313
Residual	145	10.34562	.07135

F ratio = 22.46882

Variables in the Equation

Variable	*B*	*SE B*	*Beta*	*T*	*Sig T*
LOGASSET	.269686	.034116	.530715	7.905	.0000
BIG 5	.169193	.052476	.184614	3.224	.0016
ACCOUNTT	.162608	.052153	.176581	3.118	.0022
FINANCIAL	.204867	.071109	.200500	2.881	.0046
MNCSUBSI	.245138	.094147	.150081	2.604	.0102
NPTOSALE	.005531	.002748	.166735	2.013	.0460
LOSS	.111866	.079395	.111468	1.409	.1610
TRADED	.062878	.058357	.066429	1.077	.2831
GOVTOWN	.066861	.074774	.061363	.894	.3727
MULTIPLE	–.039178	.051576	–.043480	–.760	.4487
ENGLISH	.030752	.062548	.029809	.492	.6237
YEAR END	–.018432	.054339	–.021256	–.339	.7349
(Constant)	3.558007	.115027		30.932	.0000

Table 5. Summary of the Regression Output for Model 2 (Non-Financial Companies)

Coefficient of multiple regression	.77894
Coefficient of determination (R Square)	.60675
Adjusted R Square	.55898
Standard Error	.26124

Analysis of Variance

	D.F.	Sum of Squares	Mean Squares
Regressio n	13	11.26669	.86667
Residual	107	7.30209	.06824

F ratio = 22.46882

Variables in the Equation

Variable	*B*	*SE B*	*Beta*	*T*	*Sig T*
LOGASSET	.315479	.046957	.584362	6.718	.0000
MNCSUBSI	.285840	.106028	.209764	2.696	.0082
BIG 5	.162012	.063688	.191953	2.544	.0124
TRADED	.157484	.071546	.162764	2.201	.0299
ACCOUNTT	.129253	.066990	.146945	1.929	.0563
LEVERAGE	.008810	.006428	–.095999	–1.370	.1734
YEAR END	.053427	.059774	.065607	.894	.3734
RISK	.075960	.085950	.087156	.884	.3788
NPTOSALE	.002647	.003197	.083050	.828	.4096
GOVTOWN	.061107	.084358	.063156	.724	.4704
ENGLISH	.047054	.068170	.052976	.690	.4915
COMPLEX	.073177	.134766	.037984	.543	.5883
MULTIPLE	–.005429	.060068	–.006520	–.090	.9281

explanatory variables for both models. The computations did not suggest the existence of any multicollinearity problem. None of the ratios exceeded one. The variance inflation factors (VIF) and condition numbers were also computed, none of which suggested any problem of multicollinearity in the models. The tests for detecting heteroskedasticity included plotting the residuals in histograms to test their normality, plotting observed against the expected residuals in a normal probability plot, plotting residuals against predicted values, and the White's test. None of the test results suggested any heteroskedasticity in the models. For example, the results of the White's test for Model 1 (combined sample) were: R squared .1027, F = 1.08356, and Sig. F = .3768. The significance co-efficient of the F statistic shows that the hypothesis of homoskedasticity cannot be rejected.

The stability of the models was also tested by splitting the sample into two sub-samples on the basis of median of logasset for Models 1 and 2. Separate regressions were run for the four sub-samples which showed that there were no significant difference across sub-samples. The only difference found between the smaller and larger sub-samples was the multinational subsidiary variable. This variable was found not to be significant in the smaller sub-samples because most of the MNC subsidiaries under study fell in the larger sub-samples. Apart from this, the results were found to be stable across sub-samples.

VI. DISCUSSION

The results of the combined model and the non-financial company model are very similar. At the 10% level, only two variables were not significant in both models: the profitability variable (the ratio of net profit to sales) significant for the combined sample but not for the non-financial sample and the traded variable which was significant for the non-financial sample, but not for the combined sample. Possible reasons for these two effects will be discussed later.

Both models show that auditee size is the most significant determinant of audit fees. Audit fees are positively associated with the size of the company measured by assets. More assets means more verification and hence a higher volume of audit work. A big audit firm effect was also evident, which is consistent with studies of small auditees. The variable used in the present study to proxy audit firm characteristics combines the size and international link of the audit firm. It is found that audit firms employing four or more chartered accountants and with an international link command higher audit fees than those employing less than four chartered accountants or not having an international link. Whether this is caused by the influence of the international links or the relative size advantage is impossible to judge from the data, since large size and international affiliation are strongly correlated.

Another important determinant of audit fees is the employment of a qualified accountant. It indicates that companies with qualified accountants pay more in audit fees than do companies without qualified accountants. The sign of the variable is contrary to expectations, which were based on the argument that internal control would be improved if qualified accountants were employed. Interviews with professional accountants may provide a clue, because they suggested that a qualified accountant is likely to improve the level of disclosure and so might cause the auditors to undertake more work. The results

also show that companies which are subsidiaries of multinational parents have higher audit fees. This result is as expected as multinational companies frequently report more information in line with the generally accepted accounting principles prevalent in the country of the holding company.

The rather surprising result was the rejection of the active trading variable in the combined sample, when it was significant in the non-financial sample. Clearly the reason lies in the nature of the financial company sample and is probably caused by the high audit fees paid by some public sector companies and unlisted insurance companies, both groups of companies belonging to the 'not actively traded' category. The other less surprising difference between the two samples was the lack of significance of the profitability variable for the non-financial sector and its significance in the combined sample. Again the reason lies in the nature of the financial sector, where the more profitable companies tend to have higher audit fees, possibly because of the nature of their business.

The financial/non-financial variable suggests that banks and insurance companies pay more for audit fees than non-financial companies. This is probably because of the extra volume of audit work needed to audit a sample of branches.

In both regressions, the following variables were found not to be statistically significant: government ownership, the language of the annual report, the trading activity of the company's stock on the stock exchange, the use of multiple languages, accumulated loss and the date of year end. The non-financial model was constructed principally to examine the impact of leverage and audit complexity on audit fees, but neither of these variables was significant.

The value of the regression results lies in the fact that two of the three newly tested variables were found to be significant. They are the employment of a qualified accountant and the existence of a multinational parent. These variables are more appropriate in developing countries where not all companies employ qualified accountants and where there is a significant gap between the requirements of the multinational's country accounting standards and those of the developing country.

VII. SUMMARY AND CONCLUSION

The audit fee models formulated here are intended to identify the auditor and auditee characteristics that determine the level of audit fees paid by companies in Bangladesh. Two models were developed using the data from the combined sample and data on the smaller sample of non-financial companies. The results generally suggest that auditor size and international link, auditee size, and multinational subsidiaries are significantly positively associated with audit fee levels. The auditor and auditee size are consistent with the findings of other previous studies (see for example, Chan *et al*, 1993). Three other variables were found to be significant in the combined model. They were employment of qualified accountant(s), financial sector company, and auditee profitability. On the other hand, active trading was found to be significant in only the non-financial companies model.

The study reveals that the audit services market in Bangladesh has some unique characteristics. There is an absence of any domination by the international Big Six, although there is some influence of larger Bangladeshi firms with international links. However, there seems to be an insignificant impact of audit complexity and audit risk on audit fees.

One reason for the difference may be the very low level of audit fees, indicating that the type of auditing being performed in Bangladesh is different in character from that in developed countries. The study also provides anecdotal evidence that there is a demand for higher quality audit services which could be provided by the international Big Six. The models developed in this paper are the first such attempt to identify audit fee determinants in a developing country context. It may be useful for future researchers in developing countries to identify factors that are specific to their countries. For researchers in the West, the findings provide an insight that the conventional variables may not remain valid in developing countries while some new phenomena may also be responsible for variations in audit fees.

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Book Review

Japanese Accounting: A Historical Approach *by Kyojiro Someya, Oxford University Press Inc., New York, 1996*

This book is a welcome addition to the international accounting field. It illustrates "... the kind of problems the Japanese economy has had to overcome during the past fifty years, and the various responses to them by Japanese scholars of accounting," as stated in the preface (p. v). As a collection of articles written by the author, this book is divided into three parts. Each part deals with major accounting issues which have had significant impacts on Japan's economic development over the last fifty years.

Part 1, Japanese Accounting History, contains eight articles dealing with matters related to the development of financial accounting in Japan. It is felt that since accounting is a product of the environment, for it to serve its users, it must be relevant to the environment which it serves, and it should respond quickly to changes in the environmental factors. Therefore, differences in the environmental forces demand the use of different accounting systems. Differrences in the cultural, social, legal, political, and economic systems are the determining factors in the selection of accounting standards and reports. These essays trace the progress made in the Japanese economy since the Second World War and the evolution of accounting in response to the needs of the economy.

Part II, Problems in Financial Accounting Theory, in its seven articles, illustrates the financial accounting model used in Japan and its deficiency in dealing with income determination and financial position of companies operating in the country. It has been suggested that the economic concept of income, for example, should be used to better reflect economic reality. The author presented possible solutions to the problems that the financial accounting model in Japan has had, and still faces.

Part III, Cash Flow Accounting, traces the development of the statement of cash flows in Japan, and highlights the importance of this statement ot all users of financial statements.

In summary, the strength of this book lies in the fact that it is a comprehensive coverage of accounting development in Japan. Since there are a very few Japanese references written in the English Language, this book is an excellent reference book for individuals involved in international accounting, in general, and in accounting history, in particular. Therefore, the author is to be congratulated for a job well done.

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